The linguistic encoding of landscape in Lokono

Rybka, K.A.

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Konrad Rybka

The linguistic encoding of landscape in Lokono

Have you ever wondered how the landscapes we live in are structured linguistically? How does landscape related lexicon and grammar differ across languages and why?

This book—a result of the collaboration between the author and the interdisciplinary project Language, Cognition, and Landscape at Lund University—explores these intriguing questions from a number of vantage points.

It offers the reader a detailed examination of the linguistic means used to talk about landscape in Lokono—a critically endangered Arawakan language. The Lokono people live in Suriname, Guyana, and French Guiana; this book focuses on the Surinamese dialect. Its geographic focus in turn is the border area between the grass savanna and the rainforest riddled by a number of creeks and rivers.

The book caters for the interested semantician, who will find here a comprehensive description of the landscape-related lexicon. The comparative analysis of landscape-related grammar in turn offers insights for descriptive linguists and linguistic typologists. The book contains also an elaborate description of the Lokono grammar of space. This allows the reader to locate the landscape domain—the realm of geographic-scale space—within the larger domain of spatial relations. Being the first detailed description of spatial relations in an Arawakan language, the book is also an invaluable source of information for linguists interested in the cross-linguistic study of the grammars of space in general. Moreover, the book is rich in cultural information pertaining to the landscape domain, offering the linguistic anthropologist a glimpse of the Lokono subsistence practices, material culture, and traditional beliefs inextricably linked to the local landscape. Finally, the interdisciplinary setting, in which the book took its shape, renders the book appropriate for other audiences interested in landscape, particularly geographers and landscape ethnoecologists.
THE LINGUISTIC ENCODING OF LANDSCAPE IN LOKONO
THE LINGUISTIC ENCODING OF LANDSCAPE IN LOKONO

ACADEMISCH PROEFSCHRIFT
ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. D.C. van den Boom
ten overstaan van een door het College voor Promoties ingestelde
commissie, in het openbaar te verdedigen in de Agnietenkapel
op vrijdag 26 februari 2016, te 10:00 uur
door

Konrad Arkadiusz Rybka

geboren te Warschau, Polen.
Promotiecommissie:

Promotor: prof. dr. P.C. Hengeveld, Universiteit van Amsterdam
Copromotor: dr. E.B. Carlin, Universiteit Leiden
Copromotor: prof. dr. E.O. Aboh, Universiteit van Amsterdam

Overige leden:

prof. dr. P.P.G. Boersma, Universiteit van Amsterdam
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Faculteit: Faculteit der Geesteswetenschappen

NWO
Netherlands Organisation for Scientific Research

This thesis was funded by the Netherlands Organization for Scientific Research (project number 322-70-005).
to my loving family


to my supportive friends

to my inspiring colleagues

to my knowledgable consultants
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<td>set of personal prefixes from the ( A )-class (subscript ( a ))</td>
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<td>abilitative, with stative verbs and active verbs of subclass II and IV</td>
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<td>affectivity</td>
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<tr>
<td>AND</td>
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<td>ANTCP</td>
<td>anticipative (temporal marker meaning 'just before')</td>
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<td>direct evidential</td>
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<td>derivational suffix deriving terms for entities associated with a place</td>
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XII
1. Introduction

Eight years ago, in the coastal township of Shawbost on the Outer Hebridean island of Lewis, I was given an extraordinary document. It was entitled “Some Lewis Moorland Terms: A Peat Glossary”, and it listed Gaelic words and phrases for aspects of the tawny moorland that fills Lewis’s interior. Reading the glossary, I was amazed by the compressive elegance of its lexis, and its capacity for fine discrimination: a “caochan”, for instance, is “a slender moor-stream obscured by vegetation such that it is virtually hidden from sight”, while a “feadan” is “a small stream running from a moorland loch”, and a “féith” is “a fine vein-like watercourse running through peat, often dry in the summer”. Other terms were striking for their visual poetry: “rionnach maoin” means “the shadows cast on the moorland by clouds moving across the sky on a bright and windy day”; “èit” refers to “the practice of placing quartz stones in streams so that they sparkle in moonlight, and thereby attract salmon to them in the late summer and autumn”, and “teine biorach” is “the flame or will-o’-the-wisp that runs on top of heather when the moor burns during the summer”.


Landscape, or the large-scale environment in which we live out our lives, has been the backdrop of human physical and cognitive activities since the beginning of mankind. The human race has successfully adapted to almost all types of earthly landscapes, from the Sahara desert to the Amazonian rainforest. Today this process is only acquiring new dimensions as we begin to explore and name the landscapes of celestial bodies such as the Moon (Buussy and Spudis 2012). Conquering every geographic niche on the globe involved, of course, exploring, understanding, and transforming a variety of landscapes. As a result, we have amassed a wealth of knowledge about the lay of the land, the type of materials constituting it, the availability of natural resources, and the interrelationships between the biotic and abiotic landscape elements, to name but a few important aspects of landscape. Such landscape ethnoecological knowledge, in Johnson and Hunn’s (2012) terms, is a palimpsest of individual experiences of landscape accumulated over time.

As humans, however, we do not have to rely solely on the trial-and-error method grounded in individual sensorimotor experience to gain information about the world around us. A sizeable part of our knowledge is passed on by word of mouth (whether signed or spoken) or its written equivalent. Language itself, in its lexical and grammatical aspect, is in turn constantly calibrated through continuous linguistic interaction with others to best communicate our knowledge of landscape and other domains in order to co-ordinate social actions. It is the result of this calibration that becomes “the (effectively) fixed and conventional semantic representations which linguists are in the business of describing” (Enfield 2008:248). Just how intricate the systems of landscape classification can be is
vividly illustrated by the Gaelic data described by Macfarlane (2015), a citation of which is given above.¹

Many aspects of human experience, such as various subsistence practices, settlement patterns, travelling, but also systems of beliefs and leisure activities are grounded in landscape. This multifaceted preoccupation of a common man with landscape is also mirrored by scholarly work. The continuous interest of scientific disciplines such as archeology, human ecology, geography, but also history of art, anthropology, psychology, philosophy, and politics in the domain of landscape speaks volumes for its importance to human culture, history, and cognition (e.g., Gibson 1979; Bender 1993; Feld and Basso 1996; Andrews 1999; Ingold 2000; Cresswell 2006). However, although language can give us insights into the type and structure of landscape ethnoecological knowledge, the linguistic encoding of the domain is still a fairly understudied phenomenon.

Yet, the domain of landscape lends itself perfectly to cross-linguistic examination. As Burenhult and Levinson (2008) point out, all humans experience landscape. Moreover, many landscape features are on the whole characterized by a lack of genuine boundaries, which means that the precise segmentation of landscape into nameable referents is largely dependent on human categorization (Mark 1993; Mark et al. 1999; Smith and Mark 2001; 1999). Cultural practices related to landscape features also differ dramatically across communities. Cross-linguistic variation in the encoding of landscape is therefore expected. As such, the domain provides excellent ground for testing claims of the cognitive, utilitarian, and ontological motivation for lexical and grammatical categories. Until recently, however, the linguistic encoding of landscape has not been systematically studied even for Indo-European languages. We know even less about how the domain is encoded in lesser-known and often endangered languages. It is only recently that the lexical and grammatical features of the domain have come to the forefront of the agendas of linguists. The results of such research, which have informed the theoretical and methodological framework for the present thesis, are discussed briefly in the next section and taken up in detail in the following chapters. In spite of this nascent interest in landscape, the domain still lags behind the better-studied domains such as spatial relations (between entities of small-scales, e.g. tabletops, bowls, apples), which have been extensively studied from a cross-linguistic perspective (e.g., Talmy 2000; Ameka and Levinson 2007; Levinson and Haviland 1994; Levinson and Wilkins 2006).

The paucity of research on the linguistic encoding of landscape becomes particularly problematic in the 21st century. In the face of the progressing loss of linguistic diversity around the globe, the language-specific landscape classification systems may soon be obliterated by those of the dominant languages (Harrison 2008). Landscape terminology and the knowledge it encompasses are particularly under immediate threat since the processes of language loss are often related to urbanization, industrialization, migration, and displacement, whereby the original link with landscape is lost. Even though new landscape classification systems will arise as a reaction to such new settings (including cityscapes), the existing systems

¹ I would like to thank David Mark for drawing my attention to the article by Macfarlane.
are likely to disappear or change beyond recognition. In indigenous communities, but also in the Western world, the role of the outdoors in everyday life is diminishing also due to progressing modernization. These changes are even affecting major languages such as English. The Oxford Junior Dictionary, for example, caused an outrage when a number of plant, animal, and landscape nouns were excluded from its 2007 edition (Macfarlane 2015). Unfortunately, however, such lexicographic changes reflect the statistical decrease in the use of such nouns among the target readership, and by extension, the drastic changes in how new generations of English speakers are growing up.

The loss of landscape vocabulary, irrespective of its cause, deprives humanity of a significant body of knowledge about landscape accumulated over time. This problem becomes particularly acute today when Google Maps and other more advanced geographic information systems (GIS) are capturing the whole Earth and access to such information is omnipresent. It is beyond doubt that in order not to misrepresent the indigenous landscapes by pressing them into Western categories a better understanding of the indigenous concepts of landscape is necessary. Such considerations are a major challenge for Amazonia, the Western idea of which has been demonstrated many times to be incorrect. Large parts of what was considered pristine rainforest and savanna are now believed to show clear and extensive traces of anthropogenic modification (e.g., Balée and Erickson 2006; Denevan 2002). Much of the biodiversity of certain areas turns out to be maintained and even enhanced as the result of the interaction between the indigenous populations and the environment (e.g., Hornborg 2005; Posey 1985). The modernization of the Amazon region in turn has been greatly shaped by the idea that the “empty” environment can be filled with “meaningful” infrastructure (Hecht and Cockburn 1989). The study of the linguistic categorization of landscape in Amazonian languages can further our understanding of Amazonian societies and the patterns of interaction with the local landscape. The results of the linguistic investigation of landscape can in turn inform other disciplines, advancing the state-of-the-art of Amazonian research. Ultimately, advances in the field of the linguistic encoding of landscape may have global social, scientific, and technological significance, particularly relevant in the era of globalization, climate change, and unprecedented exploitation of the natural environment. With the overarching aim of furthering our understanding of how humans categorize landscape linguistically, this thesis describes the linguistic encoding of landscape in Lokono, a critically endangered Amazonian language, and unravels a wealth of landscape ethnoecological knowledge encoded in the Lokono lexicon and grammar.

1.1 Structure of the thesis and research topics
Recent studies of the linguistic encoding of landscape in a number of genetically and areally distant languages have explored a number of landscape categorization systems (e.g., Bohnemeyer et al. 2004; Brown 2008; Burenhult 2008b; Derungs et al. 2013; Johnson and Hunn 2012a; Kathage 2005; Mark and Turk 2003; Nash and Simpson 2011; O’Meara 2010; Senft 2008; Whitley 2011). This line of research has raised a number of specific research questions about the domain of landscape in
linguistics. Since the thesis is organized as a collection of articles, the theoretical background and the relevant questions are discussed in detail in the introductions to each chapter—article. Here I only provide an overview of the topics addressed by the chapters that follow. The topics discussed in these chapters stem from a more general question—namely: What factors determine the language-specific organization of the landscape domain? Three possibilities are taken into consideration: system, culture, and nature. The general architecture of the language, including both the properties of the specific language system as well as possible cross-linguistic language universals—that is, the “system”—can impart certain categories and structures on various semantic domains, including landscape. On the other hand, the cultural practices related to landscape features, and in general the utilitarian aspect of landscape, may shape the linguistic encoding of the domain. Finally, the landscape classification system may echo the physical properties of the landscape itself. In order to determine the role of the different factors, I look at a number of aspects of the linguistic encoding of landscape.

In chapter 2, I provide the sociolinguistic background on Lokono language and culture in an attempt to re-evaluate the vitality of the language. Lokono is a critically endangered language, which necessitates urgent research on the Lokono linguistic categories, within and outside the domain of landscape. Chapter 2 is therefore also written with a view to stimulate future co-operation between the Lokono community and researchers. As such the chapter provides an overview of the state-of-the-art of Lokono documentation and description endeavors. In this chapter I also comment on how language contact has affected the domain of landscape terminology—lexical and grammatical borrowing is attested in the domain, a phenomenon particularly visible in the domain of place names but also in the realm of generic landscape terms. Chapter 2 is reprinted here, with modifications, courtesy of the Language Documentation & Conservation journal, in which an article on which this chapter is based appeared under the title State-of-the-Art in the Development of the Lokono Language. In chapter 3, I provide a sketch of Lokono grammar, focusing particularly on the grammar of space—that is, the Lokono linguistic means of expressing spatial relations. This introductory chapter offers not only an extensive description of the domain of space in Lokono but also provides a benchmark against which landscape vocabulary, and the grammatical patterns concomitant with it, can be compared. As such this expository chapter allows us to determine to what extent the linguistic encoding of landscape follows the same general patterns as the rest of Lokono lexicon and grammar in terms of the attested morphosyntactic and semantic structures. The specific focus on the grammar of space offers the possibility to examine whether spatial relations are encoded in the same way in the domain of tabletop entities and geographic-scale entities; the latter have been claimed to differ from tabletop entities in that they are, among other things, permanently anchored in space (e.g., Mark 1993; Mark et al. 1999; Smith and Mark 2001; 1999). In chapter 3,

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I indeed show that the ontological properties of landscape features render the locative construction with nouns denoting landscape features different from the locative constructions with nouns denoting tabletop entities. Two phenomena are important here. When the Figure—the entity to be located—is a landscape feature, a special type of locative construction used to express permanent spatial relations is employed. When the Ground—the entity with respect to which the Figure is located—is a landscape feature, a special type of locative marking, called the where-marking is employed. Yet, both phenomena turn out not to be limited to landscape terms only; there are a number of other nouns that also follow such aberrant patterns. Chapter 3—the Lokono grammar of space—is published exclusively as part of this thesis.

In chapter 4, I describe the Lokono terms for landforms, a subdomain of landscape in which, interestingly, Lokono has only one lexicalized term with the general meaning ‘landform’. Finer distinctions are not made at the level of the lexicon, but rather through combining the general terms with an array of relational and configurational nouns into non-lexicalized phrasal expressions. As such the chapter touches on the question of the cross-linguistic differences in landform categorization—a subdomain particularly prone to cross-linguistic variation, since the surface of the Earth is in principle a continuous mass, the segmentation of which into nameable parts depends largely on the categories imposed by human cognition (Burenhult and Levinson 2008). This is evident from the comparison of the Lokono classification of the domain with that of English, in which a number of lexicalized terms for landforms exist. The ramifications of the different types of landform classification are in turn discussed in terms of geographic theory, particularly, the question of how to best represent the Lokono data in a geographic model. The Lokono landform terms also give us insight into the type of semantic relations that structure the domain of landscape as a whole. In Lokono, partonymic and spatial relations are particularly pronounced. Chapter 4 is reprinted here with minor modifications courtesy of the International Journal of American Linguistics, in which it appeared under the title Between Objects and Places: The Expression of Landforms in Lokono (Arawakan).3

In chapter 5, I examine the subdomain of vegetation features, paying particular attention to terms for patches of plants. Lokono uses two derivational suffixes in this domain. The analysis of the meaning of such ecotope terms unravels a wealth of knowledge about the floristic composition of the ecotopes and suggests that the domain is structured along two parameters: water saturation of the area and the thickness of vegetation, the former of which correlates with the derivational pattern. There is thus a suffix that derives wet areas and a suffix that derives dry areas. The cultural importance of both parameters is discussed in the light of Lokono culture. Interestingly, the water saturation contrast is linguistically encoded by the feminine/masculine opposition. The domain of ecotope terms provides therefore an interesting example of how the general architecture of the language can be put to a

specific use in the landscape domain. The choice of the gender markers as exponents of water saturation may be ultimately motivated by the broader picture of Lokono cultural practices. Wet areas are associated with malevolent spirits as opposed to dry areas. Terms for dry areas bear masculine morphology, which is occasionally associated with a positive attitude toward the referent. Chapter 5 has been submitted to the Journal of Linguistic Anthropology.

In chapter 6, I look at Lokono place names. Place names and generic landscape terms can be thought of as two different ways of classifying the landscape. In this chapter I provide a general overview of the semantic, sociolinguistic, morphosyntactic, and referential properties of place names. Two findings are particularly important. An underlying template for forming place names is identified. Place names for large geographic entities that often stretch beyond the village territories are typically compounds. Place names for smaller local landscape features are derived or simplex forms—two strategies that rely heavily on the knowledge of the physical features of the local environment. The place names are therefore not merely a set of labels for familiar landscape features, but a coherent system. Second, Lokono place names can be singled out from the rest of the Lokono lexicon by a combination of two grammatical patterns. The exponents of the proper/generic distinction set them apart from generic nouns. Their locative marking in turn differentiates them from other proper names (e.g., names of people). The Lokono case shows that place names can be a language-internally definable class and calls for the inspection of other languages from this angle, and for the attention of other cognitive scientists to place names. Chapter 6 has not yet been submitted for publication.

In chapter 7, I take up the analysis of the differential locative marking in Lokono, called the what/where distinction. On the basis of the grammatical introduction presented in chapter 2, I show that two types of (non-abstract) nouns can be identified in Lokono. Nouns denoting people, animals, objects, and their parts combine with a special what-marker when encoding goals or locations. Nouns denoting places, including landscape terms, combine in such cases with a different marker, called the where-marker. I argue in this chapter that the what/where split is a type of nominal categorization system, similar to the other types of nominal categorization, such as the mass/count distinction. I propose that the what/where distinction encodes the likelihood of a noun functioning as the Figure or the Ground in the spatial expression. Nouns belonging to the where-category are less marked than nouns belonging to the what-category. The distinction is semantically motivated and based on the ontological properties of the referents. This becomes evident in the situations in which category shifts (from what- to where-marking and vice versa) are possible, resulting in systematic changes in meaning. More perceptually bounded entities tend to belong to the what-category, and less perceptually bounded entities tend to belong to the where-category. As such the what/where distinction is a linguistic manifestation of the ontological properties of entities, including landscape features. Chapter 7 is reprinted here courtesy of the
Language Sciences journal, in which it appeared, with modifications, under the title

*How are nouns categorized as “what” and “where”?*

In chapter 8, I take the findings from chapter 7 and examine the *what*/*where* distinction from a comparative perspective. I look at three languages that exhibit the *what*/*where* split. In all three languages, *what*-nouns are always formally less marked than *where*-nouns when functioning as Grounds in spatial descriptions. This comparative evidence supports the idea discussed in chapter 7 that the *what*- and *where*-marking may be a grammaticalized reflection of the Figure/Ground disparity. Most importantly, the distribution of nouns between the two categories is not accidental. A preliminary cline of nouns, illustrating the likelihood of a noun being classified as a *what*- or *where*-noun comes to the fore. By comparing the distribution of the ontological properties of the referents with the distribution of the terms on the cline, I investigate which ontological properties of entities may be relevant to the *what*/*where* distinction. The findings of chapter 8 are an important contribution to linguistic typology, but also to cognitive geography since the analysis of the *what*/*where* pattern can give us insight into how landscape features differ from tabletop entities in terms of their ontological properties and which of these properties are important enough to be grammaticalized in language structure. Chapter 8 has been submitted to Linguistic Typology under the title *The what/where distinction—linguistic categorization of geographic entities*, and is pending revision and resubmission.

Finally in chapter 9 I summarize the findings from the preceding chapters and discuss them from the perspective of the general question: *What factors determine the language-specific organization of the landscape domain?* Language structure, cultural practices, and the physical properties of landscape all play a role in the encoding of landscape, though to differing degrees and at different levels of representation.

### 1.2 Orthographic conventions

A few conventions adopted in this thesis require a word of introduction. First, the numbering of sections, pages, tables, figures, and examples in this thesis does not correspond to that of the articles on which the chapters are based. All examples have been standardized to match the 4-tier format used in this thesis: orthographic representation, phonetic transcription, gloss, and free translation. The orthographic standard adopted here is the result of a collaboration of the present author with the Lokono communities in Suriname, French Guiana, and Guyana (see § 2.3.3). The correspondences between the graphemes and phonemes are given in Table 1 and Table 2 below.

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4 The full bibliographical reference for the article is Rybka, Konrad (2014). *How Are Nouns Categorized as Denoting ‘what’ and ‘where’?* Language Sciences 45, pp. 28–43.
Lokono has five short vowels and five corresponding long vowels. Vowel length is marked with a circumflex. Importantly, the grapheme <u> stands for the vowel /ɨ/, not /u/. The sound [u] is not a fully-fledged phoneme in Lokono. It is predominantly a variant of /o/ when /o/ is followed in the next syllable by /i/ (e.g., kori ‘bathing place’ pronounced as /kuri/). It is also attested occasionally in free variation with /o/ (e.g., matola ‘tapir’ realized either as /matula/ or /matola/). All ten vowels given in Table 1 are partly nasalized if followed by a nasal that is the coda of the syllable. Partial nasalization is not marked in the orthography, but it is signaled by the tilde sign in the phonetic transcription (e.g., ôsun ‘go’ realized as /oːs̃unication/).

**Table 1.**

<table>
<thead>
<tr>
<th>Grapheme</th>
<th>Vowel</th>
<th>Grapheme</th>
<th>Vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;a&gt;</td>
<td>/a/</td>
<td>&lt;â&gt;</td>
<td>/aː/</td>
</tr>
<tr>
<td>&lt;e&gt;</td>
<td>/e/</td>
<td>&lt;ê&gt;</td>
<td>/eː/</td>
</tr>
<tr>
<td>&lt;i&gt;</td>
<td>/i/</td>
<td>&lt;î&gt;</td>
<td>/iː/</td>
</tr>
<tr>
<td>&lt;o&gt;</td>
<td>/o/</td>
<td>&lt;ô&gt;</td>
<td>/oː/</td>
</tr>
<tr>
<td>&lt;u&gt;</td>
<td>/ɨ/</td>
<td>&lt;û&gt;</td>
<td>/ɨː/</td>
</tr>
</tbody>
</table>

Apart from the vowels in Table 1, Lokono has a set of nine diphthongs, which are a combination of one of the five short vowels with either the semivowel /y/ or /w/. Those containing /y/ include /ai/, /ia/, /ei/, /ɨi/, /oi/, /io/. Those containing the semivowel /w/ include /ew/, /wa/, /ow/, /aw/. The diphthongs are written as a combination of the relevant vowel and either <i> (i.e. not <y>) or <w>, for instance, iniabo ‘water’, shikwa ‘house’.

As far as the consonant inventory is concerned, it is worth pointing out a few differences between the orthography and the phonetic representation. Aspirated consonants are written with an <h>—that is, <th>, <kh>. The consonants /t/, /tʃ/, and /d/ have palatalized forms before an /i/ ([tʃ], [tʃ], and [dʃ], respectively), which are not represented in the orthography. The phoneme /k/ becomes palatalized [kʃ] before /e/, which is also not rendered in the orthography. The phonemes /s/ and /ʃ/ are diachronically most likely contextual variants (/s/ was realized as [ʃ] before an /i/), but today they are independent phonemes, represented as <s> and <sh>, respectively. The phonemes /h/ and /-utils in a few forms can be interchangeable, for instance, yaho/yafo ‘cotton’). In writing, such forms are written with either <h> or <f>, depending on the speakers’ pronunciation. Moreover, there are three liquid consonants: the lateral /l/, written as <l>, the a tap or trill /ɾ/, written as <r>, and the retroflexed apical flap /ɨ/, written as <rh>. Finally, the Lokono nasal written as <n> is realized as [n] before a pause or the velar consonants /k/ and /kʰ/, as [m] before /p/ and /b/, as [n] before the vowel /ɨ/, and as [n] in all other contexts.
TABLE 2.

**GRAPHEMES AND THE CONSONANTS THEY REPRESENT.**

<table>
<thead>
<tr>
<th>Grapheme</th>
<th>Vowel</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;f&gt;</td>
<td>/f/</td>
<td>occasionally interchangeable with /h/</td>
</tr>
<tr>
<td>&lt;p&gt;</td>
<td>/p/</td>
<td>rarely attested in Lokono (e.g., as fossilized in place names)</td>
</tr>
<tr>
<td>&lt;b&gt;</td>
<td>/b/</td>
<td></td>
</tr>
<tr>
<td>&lt;t&gt;</td>
<td>/t/</td>
<td>palatalized to [tʃ] before /i/, which is not represented in writing</td>
</tr>
<tr>
<td>&lt;th&gt;</td>
<td>/θ/</td>
<td>palatalized to [θ] before /i/, which is not represented in writing</td>
</tr>
<tr>
<td>&lt;d&gt;</td>
<td>/d/</td>
<td>palatalized to [dʒ] before /i/, which is not represented in writing</td>
</tr>
<tr>
<td>&lt;k&gt;</td>
<td>/k/</td>
<td></td>
</tr>
<tr>
<td>&lt;kh&gt;</td>
<td>/kh/</td>
<td></td>
</tr>
<tr>
<td>&lt;h&gt;</td>
<td>/h/</td>
<td>occasionally interchangeable with /h/</td>
</tr>
<tr>
<td>&lt;w&gt;</td>
<td>/w/</td>
<td>bilabial semivowel</td>
</tr>
<tr>
<td>&lt;sh&gt;</td>
<td>/ʃ/</td>
<td>historically a variant of /s/ before /i/; today a separate phoneme</td>
</tr>
<tr>
<td>&lt;l&gt;</td>
<td>/l/</td>
<td>lateral contrasting with the retroflexed apical flap /ɿ/ and tap/trill /r/</td>
</tr>
<tr>
<td>&lt;r&gt;</td>
<td>/ɾ/</td>
<td>tap/trill contrasting with the retroflexed apical flap /ɿ/ and lateral /l/</td>
</tr>
<tr>
<td>&lt;rh&gt;</td>
<td>/ɹ/</td>
<td>retroflexed apical flap contrasting with tap/trill /ɿ/ and the lateral /l/</td>
</tr>
<tr>
<td>&lt;m&gt;</td>
<td>/m/</td>
<td></td>
</tr>
<tr>
<td>&lt;n&gt;</td>
<td>/n/</td>
<td>realized as [ŋ] before a pause or the velar consonants /k/ and /kh/; as [m] before /p/ and /b/; as [n] before the vowel /i/; and as [n] in other contexts</td>
</tr>
<tr>
<td>&lt;w&gt;</td>
<td>/w/</td>
<td>bilabial semivowel</td>
</tr>
<tr>
<td>&lt;y&gt;</td>
<td>/y/</td>
<td>semivowel</td>
</tr>
</tbody>
</table>

Recent and *ad hoc* borrowings from other languages have not been phonologically integrated into the Lokono system. Such forms may contain vowels and consonants other than the Lokono inventory given in Table 1 and Table 2.

Finally, as an established convention in the literature on Lokono, the nominalized form of the verb ending in the event nominalizer –*n* is used as the citation form of the verb (e.g., *bokon* ‘cook’). Verbs are translated in the text without *to* (e.g., *andun* ‘arrive’, not ‘to arrive’). Stative verbs are translated with adjectives (e.g., *semen* ‘tasty’, not ‘be tasty’). The glosses used follow the general template of Leipzig Glossing Rules, but instead of the hyphen (−) an en-dash (–) is used to mark morphemic boundaries. The en-dash is also used in the running text to identify suffixes (e.g., the event nominalizer –*n* mentioned above).
2. Sociolinguistic background

In 2009, while conducting my first field research among the Lokono, I visited an ethnically mixed settlement called Orealla on the Guyanese side of the Corentyne River. During the ten days that I spent in this otherwise exciting and thriving locality, I found only five fluent speakers of Lokono, a mere trifle among the 1500 inhabitants of the village. Unfortunately, the ratio later turned out to be representative of Lokono settlements today.

In Orealla, I worked with an elderly Lokono consultant named Eddy who had moved there from another Guyanese village. He was talkative, knowledgeable, and above all excited at the possibility of talking to someone in his mother language. To Eddy’s regret, he had to use the Guyanese Creole English, the local lingua franca, also known as Creolese, to talk to younger people in his new village. When discussing language shift in Orealla, Eddy made the following memorable comment:

(1) Nadukharukha damun, dadukha nashibonro, fonashiatidiathi tha nashibo.
3PLA–see–COND 1SGA–DAT 1SGA–see 3PLA–face–LOC.WHR–ATL
fonäʃa–tʃi d’a–tʃi tʰa na–fibɔ
hungry–SBJ,REL–M SMLR–APRX3FA–E,V 3PLA–face
‘When (the children) look at me, I see their faces; they look as if they were hungry.’

Today, this metaphorical hunger for the Lokono linguistic and cultural heritage is growing. Members of both the Lokono and the academic community are trying to document the Lokono linguistic and cultural heritage, and contribute to its preservation. This chapter re-assesses the vitality of the Lokono language, and gives a detailed overview of these activities, past and present, with particular focus on the Surinamese dialect. The aim of the chapter is to provide scholars with an updated picture of the Lokono context in order to facilitate future work between the Lokono and the academic community. As part of the assessment, I discuss the state-of-the-art in language documentation, a term that requires a word of definition (see also recent volumes by Chelliah and Reuse 2011; Thieberger 2011b; Gippert, Himmelmann, and Mosel 2006; Grenoble and Furbee 2010). Thieberger (2011a) aptly summarizes what language documentation means today and what practices this ‘new paradigm of research’ represents:

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I would like to thank the Lokono people who are engaged in language development activities, and everyone else who contributed information to this chapter. In particular I want to thank Mr. Martin Purci, Mr. Willem Visser, Mrs. Ursula Visser-Biswane, Mrs. Sonia Orassie, Mrs. Carla Madisian, and Dr. Laura van Broekhoven. I also want to thank Prof. Kees Hengeveld and Dr. Eithne Carlin for their comments on the first draft of the chapter, and the two anonymous reviewers of Language Documentation and Conservation for their feedback.
This paradigm focuses on collaboration with the speakers and on the interdisciplinary nature of knowledge systems, of which language is one part. A further focus is on primary data as the warrant for analytical claims, and emphasizes replicability of the analysis resulting in such claims. From this new paradigm flows the need to create reusable primary data, and to provide for its accessibility and long-term curation.

Thieberger (2011a:1)

Language documentation defined in this way contrasts with, but does not oppose, the older ‘grammar and dictionary’ paradigm. It emphasizes accessibility of primary data (audio and video recordings), which can be reused for the same or for other purposes (replicable, reusable), and the focus on language as a part of a larger knowledge system. This chapter gives an overview of the language documentation outcomes in the Lokono case in order to facilitate the use of the collected primary data for new purposes.

The chapter is structured in the following way. After providing background information on the Lokono language (§ 2.1), I re-assess its vitality following UNESCO’s language endangerment guidelines (§ 2.2). I then discuss language development activities, including language documentation (§ 2.3). As a way of summing up, I bring the insights from previous sections together, re-evaluate the vitality of the language, and consider the prospects for future language- and culture-related activities (§ 2.4). In the online Appendix I, I provide a catalogue of scholarly work on the Lokono language and culture. The online Appendix II contains an overview of the heritage organizations operating within the Lokono communities.

2.1 Linguistic and geographic setting

Lokono is spoken in the Guianas—a complex linguistic environment (Carlin and Arends 2002; Cerquiglini, Alessio, and Sibille 2003; Forte 1987; Renault-Lescure and Goury 2009). In the three Guianas (Republic of Suriname, Republic of Guyana, and French Guiana), there are three official languages (French, Dutch, and English, respectively), three creole lingua francas with their dialectal continua (Guianese Creole French, Sranantongo, and Guyanese Creole English, respectively) and a number of other languages of Eurasian origin (e.g., Javanese, Hakka Chinese, Hindustani (Sarnami), Brazilian Portuguese). On top of that, there are Amerindian languages. These include Lokono, Wapishana, Mawayana, and Palikur from the Arawakan stock; Karl’na, Trio, Wayana, Waiwai, Akawaio, Patamona, Makushi,

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Among the Lokono speakers the language is known as Lokono Dian or Lokono for short. Next to this endonym, the language is also known, both within and outside of the community, under the exonym Arawak (Arowak in Dutch, Arawak in French), a term probably first written down by Captain Wyatt during his voyage between 1594–1595 (Patte 2010).

7 I use the term Amerindian, rather than indigenous, since the latter term is heavily politicized and can be misleading. Maroon groups in Suriname, for instance, also have the status of indigenous people (Kambel and MacKay 1999).
Pemon, Katuena, and Sikïiyana from the Cariban stock; Emerillon (Teko) and Wayãpi from the Tupian stock; as well as Warao and Taruma (both unclassified). 8

Lokono represents the Northern Arawakan language family, and is closely related to the Wayuu language, and the nearly extinct Parajuano language, both spoken in the La Guajira peninsula (Colombia, Venezuela). Its other relatives are the now extinct Taino and Island Carib, the descendant of which is called Garifuna. Garifuna is a vital language of Honduras, Belize, Nicaragua, and Guatemala (Captain 2005; Hickerson 1992; Taylor 1962). Lokono is, however, only remotely related to the other Arawakan languages of the Guianas (Aikhenvald 2012; Dixon and Aikhenvald 2006).

Lokono has two mutually intelligible dialects. Western Lokono (or Guyanese Lokono) is spoken in Guyana, and Eastern Lokono (or Surinamese Lokono) in Suriname and French Guiana. The Western dialect is more conservative in terms of phonological processes such as palatalization across morpheme boundaries, and syllable reduction processes (e.g., Baarle 1996). The two dialects also differ lexically and syntactically due to prolonged language contact with different languages (Warao, Akawaio, Kari'na, English, and Guyanese Creole English in the case of the Western dialect, and Dutch, Sranantongo, and Kari’na in the case of the Eastern dialect). 9 There are few modern linguistic materials on the Western dialect, which makes a detailed comparison impossible at the moment. However, at the University of West Indies at Mona, Jamaica, Daidrah Smith is currently completing her Ph.D. dissertation on the Guyanese dialect.

Geographically, the Lokono people live in peri-coastal villages in the three Guianas, as well as in the three capital cities: Georgetown, Paramaribo, and Cayenne. The rural peri-coastal settlements are scattered throughout the Guianas, intermixed mostly with those of the Kari'na people, speaking a Cariban language, and in Guyana with those of the Warao people, speaking a language isolate. The villages form a belt stretching from east to west across the Guianas. North of this belt, there is only the actual coast of the Guianas where the majority of the countries’ populations reside, and where most of the economy is concentrated. The coast is the realm of the official languages, the lingua francas, and the languages of Eurasian origin. South of the peri-coastal belt, on the other hand, one finds the interior, inhabited by the Maroon people, and other Amerindian groups. According to an unpublished report by the Summer Institute of Linguistics, there is also a small Lokono community in Venezuela, not far from the Guyanese border (Summer

8 The reader should be aware that the autodesignations used by the Amerindian peoples show some variation, and may not coincide in some cases with those used here. For example, Kali'na /kali?na/ is the term used by the Tyrewuju dialect speakers, while the Areaty dialect speakers prefer Kari'na /kari?na/, a spelling that reflects their pronunciation (with an /r/ in place of the /l/). In the new orthography developed by Yamada, more phonetic detail is represented, therefore the names would be written as Kali’nja and Kari’nja, respectively.

9 Within the Eastern dialect (at least), there is also some linguistic variation between the villages, although the recent increase in mobility makes it difficult to judge which features belonged to which variant. These are minor differences such as the presence or the absence of an initial /h/. According to the speakers, the differences were more pronounced in the past allowing speakers to deduce from the way one speaks the village from which one comes.
Institute of Linguistics 2002). Finally, there is also a sizeable community of Lokono people living in the Netherlands who emigrated from Suriname in the last few decades for economic, educational, and political reasons. Patte (2014) also mentions an expatriate Lokono community in Great Britain, but provides little detail about its origin and sociolinguistic profile.

While the number of Lokono villages in French Guiana appears to be growing, the Surinamese settlements have since long been suffering from depopulation. Many Lokono people move to the urban or industrialized complexes in pursuit of employment and educational opportunities (e.g., Wekker, Molendijk, and Vernooij 1992). The present Lokono communities around Cayenne in French Guiana were established only in the second half of the 20th century, mostly as a result of such migrations out of Suriname (e.g., Grenand 1981). These movements escalated during the War of the Interior (1986–1992) in Suriname, when many villages had to be abandoned for safety reasons. Many of the resultant urban refugees never returned to their home villages. This sudden dislocation to the city for many meant separation from the Lokono language and culture. As a consequence, some villages disappeared completely (e.g., Kopi in Suriname) and intergenerational language transmission was disrupted (see § 2.2.2).

However, as asphalt roads and electricity are reaching the Lokono villages located closer to the urbanized and industrialized areas, a trend to move back to such settlements is increasing. The trend, supported by the Surinamese government, which funds new housing projects outside the capital, attracts not only the Lokono but also other ethnic groups. As a result, Surinamese villages such as Powakka in the vicinity of the SURALCO bauxite plant, or Matta in the vicinity of Paramaribo and the International Airport at Zanderij, continue to grow, though their ethnic profile is slowly changing toward a mixed Lokono–Creole composition. Similarly in Guyana and French Guiana other ethnic groups are continuously absorbed into the Lokono villages.

2.2 Language vitality

The assessment of the vitality of a language is a complex matter. In order to make it more comparable in the analysis presented below I follow the UNESCO guidelines for assessing language endangerment listed in (2) below (UNESCO Ad Hoc Expert Group on Endangered Languages 2003, henceforth UNESCO). In the list I also include language contact, which is not part of UNESCO’s framework, but was added here in order to give a more comprehensive picture of the Lokono sociolinguistic situation.

10 I use the UNESCO guidelines, as opposed to, for example, Fishman’s (1991) Graded Intergenerational Disruption Scale (GIDS), or the framework used by Ethnologue (Gordon 2005; Grimes 2000; Lewis 2009), since Lokono has previously been graded with respect to the UNESCO criteria (Moseley 2010). This adds a comparative diachronic dimension.
In this section, I look at factors (a) to (e). Factors (f) and (g) are discussed in detail in section 2.3 as part of the description of language development activities. In the UNESCO framework, a language can score from 0 to 5 on each factor. The grading system is given in (3).

(3) 0 = extinct.
1 = critically endangered.
2 = severely endangered.
3 = definitely endangered.
4 = unsafe.
5 = safe.

Based on data from Carlin and Arends (2002) and Queixalós and Renault-Lescure (2000), Lokono has previously been classified as severely endangered, but no detailed discussion of its situation has been provided (Moseley 2010). In the following sections, I re-evaluate its status by discussing each factor in detail.

### 2.2.1 Number of speakers

Both the number of ethnic Lokono (i.e. the total ethnic population) and the percentage of Lokono speakers in the three Guianas are hard to estimate. In Table 3, I give the previously published estimates. It should be stressed, however, that there has been no proper sociolinguistic survey of the Lokono language.

<table>
<thead>
<tr>
<th>Country</th>
<th>Total population</th>
<th>Number of Speakers</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>French Guiana</td>
<td>1500</td>
<td>A few hundred</td>
<td>Patte (2009)</td>
</tr>
<tr>
<td>Guyana</td>
<td>15000</td>
<td>1500</td>
<td>Forte (2000)</td>
</tr>
<tr>
<td>Venezuela</td>
<td>500</td>
<td>100</td>
<td>SIL (2002)</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>500</td>
<td>no data</td>
<td>Mink (1992)</td>
</tr>
<tr>
<td>Great Britain</td>
<td>no data</td>
<td>no data</td>
<td>Patte (2014)</td>
</tr>
</tbody>
</table>

Based on long-term fieldwork and the collaboration with Lokono organizations from the three Guianas since 2009, I conclude that the figures today are lower. The percentage of fluent speakers—that is, speakers who have an active knowledge of many linguistic domains—is around 5% of the ethnic population. There is also a...
sizeable community of semi-speakers possessing different degrees of passive knowledge.

Although the precise data are missing, a similar picture emerges from the last population census in Suriname. The census conducted in 2012 lumps all Amerindian groups of the country into one category: Inheems (Dutch for ‘indigenous’). According to the source, 20344 people declared themselves Inheems (Algemeen Bureau voor de Statistiek 2013, I:46). Additionally, the census reports that in 368 households, inhabited cumulatively by 1340 people, an Amerindian language is the main means of communication. Moreover, in 329 households, an Amerindian language is a second language (Algemeen Bureau voor de Statistiek 2014, III:53). In this latter case, the number of inhabitants is not given, but assuming the same ratio of cohabitation, we can expect around 1198 inhabitants. Amerindian languages, on the whole, are therefore used at home by around 12.5% of the ethnic Amerindian population. However, only for 6.5 % of the total Amerindian population is an indigenous language the first language. Knowing that Cariban languages are on the whole more vital than Lokono, it seems reasonable to expect that Lokono is spoken at home by around 5% of the ethnic Lokono population. In UNESCO’s terms, Lokono would score therefore as “critically endangered” (grade 1), since “very few speak the language” (UNESCO 2003:9).

2.2.2 Intergenerational language transmission

The Lokono language is not being transmitted to children anymore. Lokono children are raised speaking the official languages and the lingua francas. The break in transmission took place more or less two generations ago, and is attributed by many speakers to social stigma and institutional oppression. In Suriname, for instance, the older generations report that it was forbidden to speak Lokono at school, even between students. In all three Guianas, Amerindians were considered to be the lowest cohort of society by other, more numerous ethnic groups. It should be mentioned, however, that the Lokono have used creole languages at least since the 19th century to communicate with the colonizers, though it is quite likely that this phenomenon has an even longer history. It has also been claimed that in the 19th century there were already Lokono communities that spoke Berbice Creole Dutch as their mother tongue (Robertson 1987:24). It is also a fact that Berbice Creole Dutch is heavily influenced by Lokono vocabulary (see Kouwenberg 1994).

In the case of the Lokono, who live close to the urbanized centers, this meant that the parents often preferred to teach their children the lingua franca and the official language, so that their children could fit in better within society in the future, and, for instance, find a better job. Economic considerations have played therefore an important role in language shift as well. Moreover, many Lokono report also that they spent part of their childhood in the city due to the War of the Interior (1986-1992), which further contributed to disrupting intergenerational transmission. As a result, the Lokono linguistic community today is best described as a continuum of language proficiency. Since again quantitative data are missing, in Figure 1, I schematically represent the language skills of different Lokono age groups based on my fieldwork in the three Guianas. Gender plays a secondary role in the distribution
of Lokono language skills, with women, who are typically less mobile, tending to be more fluent in Lokono.

Based on extensive fieldwork in virtually all Lokono villages, the collaboration with numerous Lokono organizations throughout the last six years, and a survey of language skills in one village (Cassipora), the following picture of Lokono language skills emerges. For comparative purposes we can describe the speaking skills of the Lokono represented schematically in Figure 1 in terms of the proficiency guidelines of the American Council on the Teaching of Foreign Languages (ACTFL). ACTFL uses the following five major categories: superior, distinguished, advanced, intermediate, and novice (for details see ACTFL 2012).

The members of the oldest generations of Lokono (70+) are fluent Lokono speakers—that is, they have active and passive knowledge of many domains, corresponding to the categories ‘superior’ and ‘distinguished’ in ACTFL terms. Members of this group also often have ‘advanced’ to ‘intermediate’ speaking skills of the lingua franca, and usually ‘novice’ knowledge of the official language. However, the knowledge of the lingua franca varies a lot in this group on an individual basis.

Lokono language skills are decreasing with age. People between 50 and 70 are usually ‘advanced’ speakers of all three languages, but use Lokono sporadically, due to the fact that the use of official languages, lingua francas, and Lokono is dictated by different sociolinguistic factors (see § 2.2.3). Sranantongo is nevertheless the dominant language in this group as a whole. The generation of 30- to 50-year-olds has, at best, ‘intermediate’, and usually only passive knowledge of Lokono, but ‘advanced’ to ‘distinguished’ knowledge of the official language and the lingua franca. The youngest generation has neither active nor passive knowledge of the Lokono language, but ‘advanced’ to ‘distinguished’ knowledge of the other languages, with clearly more proficiency in Sranantongo. Worth noticing is the fact that it is the lingua francas that are today the means of daily communication bridging the generational gap. In UNESCO’s terms, Lokono is again rated,
therefore, as “critically endangered” (grade 1), since “the language is used by very few speakers, mostly of great-grandparental generation” (UNESCO 2003:8).

2.2.3 Domains of language use

The domains, in which Lokono is used today, are limited, while the official languages dominate most of the formal, and the lingua francas most of the informal, contexts.\footnote{The domains of use of the official languages and the lingua francas have been greatly simplified in this chapter. For more detail see also the forthcoming volume by Yakpo and Muysekn (n.d.).} Official languages are used exclusively in the educational systems of the three nation-states. They also dominate the mass media and the politics. The creole lingua francas are today also present in the media, and this trend is clearly increasing when compared with the situation from a few years ago. Noteworthy is the fact that since the 1980s, Desi Bouterse, the present president of Suriname, often addresses the masses both within and outside the country in Sranantongo instead of Dutch. In any case, lingua francas are the de facto languages of daily interaction for many, though certainly not all, inhabitants of the Guianas, leaving very little room outside the home to use Lokono.\footnote{The creole lingua francas are not used as first languages by the communities of recent immigrants (e.g., Chinese, Brazilians), who nevertheless use Sranantongo to talk to Surinamese, but rarely learn Dutch. The Amerindian communities in the south (e.g., Trio, Wayana) often use Dutch to communicate with the outsiders.}

In Suriname, there used to be a Lokono radio broadcast every week that continued for decades up to the middle of the 1990s. However, after Just Orassie—the Lokono radio voice of Suriname—retired, there was no one to take over his position. Since 2010, an Amerindian quarterly has been published in Suriname by the Vereniging van Inheemse Dorpshoofden in Suriname 'Association of Amerindian Chiefs in Suriname’. The title of the publication is Maraka, which means ‘medicine-man’s rattle’ in Lokono and the Cariban languages of the area, but except for occasional Lokono titles of columns such as Hiyaro Diadiadwan ‘women’s conversations’ its content is exclusively in Dutch.

The Lokono language is, on the whole, closed to new domains. Coinage of terms for novel items is rare, especially when compared with the intensity of coinage in the past (see Penard and Penard 1926; Rybka n.d.). The Lokono used to coin new terms for concepts and tools borrowed from other cultures, often by means of complex descriptive nominalizations as in (4).

\begin{equation}
\text{faretho bian koti darhidikwana}
\end{equation}

\begin{verbatim}
fare' o  bian  kurti  dasiri-kuwana
white.man  two  foot  run--NMLZ.INSTR
'bicycle (lit. 'white man’s two feet running implement')'
\end{verbatim}

The shifts in domains are also visible in the naming pattern of new settlements. These do not receive Lokono names anymore, but are named in the official language.
(e.g., *Klein Powakka, Hollandse Kamp*, both villages in Suriname, and *Cécilia* a village in French Guiana). In UNESCO’s terms, Lokono is therefore rated again as “severely endangered” (grade 2) for shifts in the domains of use. In the UNESCO’s report this category is characterized in following way:

*The non-dominant language is used only in highly formal domains, especially in ritual and administration. The language may also still be used at the community center, at festivals and at ceremonial occasions where older members of the community have a chance to meet. The limited domain may also include homes where grandparents and other older extended family members reside and other traditional gathering places of the elderly. Many people can understand the language but cannot speak it.*

UNESCO (2003:10)

For response to new domains, however, Lokono scores zero, falling into the category of languages that are “not used in any new domains” (UNESCO 2003:11).

### 2.2.4 Language attitudes and policies

It is noteworthy that the United Nations Declaration on the Rights of Indigenous Peoples was translated into Lokono. However, very few Lokono people are actually familiar with the document—a problem of distribution that applies to all materials in the Lokono language. The utility of the document is also limited due to the fact that it is written in an idiosyncratic spelling used by the translator. Also notable is the fact that in all three countries there is a national Amerindian day, during which the Amerindian peoples of the Guianas celebrate their cultural heritage with the rest of the society. However, the governmental policies and practices regarding the Amerindian languages are less encouraging. In general terms, even though the situation differs per country, in all three Guianas there is a discrepancy between theory and practice when it comes to language attitudes and policies.

In Suriname, the exoglossic language policy, or in fact lack of any official language policy, has since the colonial times endorsed Dutch as the sole official language, and the government will most likely continue upholding this stance for the decades to come. Amerindian languages in Suriname therefore do not have an official status. On the other hand, in Guyana, the Ministry of Amerindian Affairs tries to implement policies that facilitate cultural, social, and economic development of the Amerindians (see the Lokono language course described in § 2.3.4). However, the efforts are still far from constituting a well-planned, sustainable, and consequent policy, and are limited to smaller projects. Lokono, together with other Amerindian languages, is however recognized as a regional language in Guyana. Finally in French Guiana, Lokono together with other Amerindian and Maroon languages has the status of a regional language of France. The local government has on more than

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on one occasion supported the activities of the Lokono organizations in French Guiana. This, however, happens on a project-by-project basis, and it is unlikely that Lokono will be endorsed on any long-term basis in the French department. Despite clear differences between the three countries, there is no actual implemented language policy aimed at sustaining and developing the Lokono language. The governments’ actions have until now been limited to small, short-term projects. In UNESCO’s terms, when we look at the practical side of language policy, Lokono scores therefore again as “critically endangered” (grade 1).

In the settlements themselves in all three countries, there is support for language revitalization, especially among the adult ethnic Lokono who do not speak the language anymore. This applies also to the expatriates living in the Netherlands. However, not many Lokono participate actively in the attempts at revitalizing the language. The language, due to the already ethnically mixed profile of the group, is not a strong component of the Lokono identity. Hardly any Lokono today sees it as a prerequisite to claims of Lokono ethnicity. Although the social stigma of being Amerindian is still present in some form, the Lokono are part of the fabric of society. They are not ashamed anymore of speaking their language publicly, although this hardly ever happens due to the limited number of fluent speakers. They eagerly participate in the celebrations of the Amerindian day, manufacture handicrafts for sale, while some even engage in international collaborations with the Lokono from the other countries. In UNESCO’s terms, Lokono scores therefore as “severely endangered” (grade 2) with regard to community’s attitudes and policies: “some members support language maintenance; others are indifferent, or may even support language loss” (UNESCO 2003:14).

2.2.5 Language contact

Contact-induced phenomena in Lokono, especially lexical borrowing, are described in a number of publications (Baarle 1995; Jubitana 1998; Patte 2005; Rybka n.d.). Suffice it to say that Lokono shows both lexical and structural borrowing from the languages it is in contact with. I want to mention here, however, a metalinguistic category that the speakers use—namely, diep Lokono, Dutch for ‘deep Lokono’—which is a reflection of the contact situation. Ethne Carlin (p.c.) suggests that the distinction is parallel to the distinction made for Sranantongo, in which dipi dipi ‘deep deep’ stands for archaic forms and more elaborate style, “not riddled with Dutch, and which is difficult for most urban Creoles” (Carlin 2004:201). Similarly for Lokono, the term diep is used to describe words or structures that are not part of the active knowledge of particular speakers. As such the diep-category serves as a mechanism allowing speakers to talk about their own depletion of Lokono vocabulary and grammar in a face-saving manner. In other words, instead of saying

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14 A similar distinction is also found in the Trio language (Cariban), where the locative antīnə ‘deep (in water or ground)’ in its extended use means ‘difficult to understand’. As such it refers, for instance, to the ceremonial dialogue used by the Trio until about the 1960s (Carlin 2004: 201).
I do not know that word or structure, one can say: This is deep Lokono. I have not attested any equivalent term for the distinction in the Lokono language itself, which further shows that it is a phenomenon limited to the speakers who already shifted to other languages, and are therefore in need of verbalizing the changes in their linguistic repertoire. Interestingly too, there is no lexicalized term for the opposite of diep. The language-contact criterion is not part of the UNESCO’s framework, and is therefore omitted in the final assessment.

Since the rest of the thesis zooms in on the encoding of landscape, it is worth noting that this domain is also affected by language contact. The attested borrowed landscape terms are listed in Table 4.

### Table 4. Borrowing in the landscape domain.

<table>
<thead>
<tr>
<th>Borrowing</th>
<th>Lokono</th>
<th>Meaning of the Lokono term</th>
</tr>
</thead>
<tbody>
<tr>
<td>bergi ‘hill’</td>
<td>horhorho</td>
<td>any landform, a general term unspecified with respect to size and shape</td>
</tr>
<tr>
<td>forto ‘city/Paramaribo’</td>
<td>thoyoshikwa</td>
<td>typically the capital city Paramaribo, but also other big cities, literally ‘old house’</td>
</tr>
<tr>
<td>liba ‘river’</td>
<td>oni</td>
<td>a river (lit. ‘rain’) refers to the largest rivers that end in the sea; a term often replaced by proper names of rivers in today’s speech or barhâ dako ‘tributary of the sea’</td>
</tr>
<tr>
<td>kriki ‘creek’</td>
<td>onikhan</td>
<td>a creek (lit. ‘little rain’), refers to all other watercourses (and their tributaries) that and in the major rivers, irrespective of their size</td>
</tr>
<tr>
<td>zwampu ‘swamp’</td>
<td>onêbera</td>
<td>a swamp or a waterlogged area, typically not permanent (literally ‘big rain’, in contrast to onikhan ‘creek’ and oni ‘river’)</td>
</tr>
</tbody>
</table>

All borrowings are from Sranantongo, the language of informal contexts. The referents of the borrowings and the Lokono equivalents are, however, not exactly the same. The term liba ‘river’ was attested in the speech of a number of speakers. The Lokono equivalent oni ‘river’ is used primarily in its original sense ‘rain’, which must have stimulated the borrowing. On the whole, instead of using a generic term when talking about rivers in Suriname, the speakers use their proper names or the descriptive term barhâ dako ‘tributary of the sea’. Only the biggest watercourses in Suriname—those that end in the sea—fall into the category of the referents of oni, which makes the use of proper names feasible as a strategy for referring to them. The meaning of the noun liba in Sranantongo does not necessarily entail that the watercourse ends in the sea. The term oni is also used productively in Guyanese Lokono. The Lokono term onikhan refers in turn to all other watercourses—those that flow into larger creeks and finally into rivers. The Sranantongo term kriki is, on the other hand, restricted to small watercourses only. The term onêbera and zwampu are probably the closest equivalents; the referents of the Lokono onêbera are, however, usually seasonal. Similarly, there appears to be little difference between forto (from English fort) and thoyoshikwa (lit. ‘old house’) apart from the underlying semantic structure, encoding the different historical perspective on the
capital city Paramaribo. The term _horhorho_ ‘landform’ is only an approximation of the meaning of the term _bergi_—a borrowing that ultimately comes from Dutch _berg_ ‘mountain’. The Lokono term is unspecified for size and shape and it is entangled in a whole system of complex expressions, with relational and configurational nouns that specify its spatial properties. This system is discussed at length in chapter on landform expressions (chapter 4).

### 2.3 State-of-the-art in language development

With regard to the UNESCO’s vitality factors, in spite of the long historical record of materials on Lokono, the language scores merely 2 on the availability of materials for language education and literacy. The existing grammatical descriptions leave much to be desired (§ 2.3.1), and the existing literacy materials in Lokono have reached few speakers (§ 2.3.2). This is clearly attributable to the fact that until recently writing and reading in Lokono has been a matter exclusive to missionaries, researchers, and a few interested Lokono. It also shows that little effort has been done on the part of the researchers to produce materials for the community. Only in 2010 have steps been taken by the community to standardize and popularize the Lokono writing system in the three Guianas (§ 2.3.3). With respect to UNESCO’s criteria, Lokono falls into the category described in the following way: “written materials exist, but they may only be useful for some members of the community; for others, they may have a symbolic significance. Literacy education in the language is not a part of the school curriculum” (UNESCO 2013:12).

Particular attention is paid below also to language documentation, for which Lokono scores relatively high. There are a few grammatical sketches, scientific articles, dictionaries, and even glossaries of specialized vocabularies such as plant names (§ 2.3.1). More importantly, a repository of reusable primary Lokono language data has been created (§ 2.3.5). However, most of these materials focus on the Surinamese dialect, while the Guyanese dialect remains understudied. In terms of UNESCO’s criteria, Lokono scores therefore 3 for the Surinamese dialect, representing languages that may have “an adequate grammar or sufficient numbers of grammars, dictionaries and texts but no everyday media; audio and video recordings of varying quality or degree of annotation may exist” (UNESCO 2003:16). The Guyanese dialect scores, however, only 1, since “there are only a few grammatical sketches, short word-lists, and fragmentary texts; audio and video recordings do not exist, are of unusable quality, or are completely unannotated” (UNESCO 2003:16). Most recently, in the fall of 2015, the linguist Keisha Josephs together with Sheldon Noel, a member of the Dakota Nation and in cooperation with Ivan Cornelius, a Lokono teacher from the village Wakapoa, will begin the documentation of the Guyanese dialect. This project will improve the state of documentation of the lesser studied Guyanese dialect.
2.3.1 Language descriptions

In spite of the fact that Lokono boasts a long history of research, there is still no modern comprehensive grammar of the language. Important historical references include the works of Claudius Henricus de Goeje (Goeje 1928; 1929; 1942) as well as a Lokono-German dictionary (Schumann and Schumann 1882a) and a grammar (Schumann and Schumann 1882b). The first modern grammatical sketch was a dissertation by Pet (1987). It was, however, theory-driven as his main purpose in describing Lokono nominal phrase was to test a hypothesis of generative grammar. Patte’s (2003) doctoral dissertation gives a fuller picture of Lokono grammar, but as it remains unpublished, is not readily available. Both dissertations describe the Surinamese dialect of Lokono. Up until today there is no linguistically sound description of the Guyanese dialect. Patte has also produced a number of articles, chapters on specific topics (e.g., Patte 2002; 2005; 2009; 2010; 2014).

Lexicographical works include the already mentioned historical Lokono-German dictionary (Schumann and Schumann 1882a), but also a few modern dictionaries of varying sizes. For the Guyanese dialect, there is a quite comprehensive dictionary by Bennett (1989). Also originating in Guyana are the lists of Lokono names of fauna and flora by Fanshawe (1947; 1948; 1949; 1950), reprinted recently as Fanshawe (1996). For the Surinamese dialect, there are two small dictionaries printed as part of Pet’s (1987) dissertation and the course book by van Baarle and colleagues (1989). Finally, Patte published a dictionary, which is a compilation of the previous lexicographical work and her own data (Patte 2011).

2.3.2 Literacy materials

As is the case with many Amerindian languages, one of the first materials ever produced in Lokono were translations of biblical texts. An overview of the mostly unpublished translations of parts of the Bible is given in the online Lokono catalogue (Appendix I), and in other publications (e.g., Baarle 1999; Benjamin 1987; Ziel et al. 2009). Here I want to mention only the recent works that contribute to the development of the Lokono language today.

In the 1970s, the Instituut voor Taalwetenschap in Suriname, the Surinamese branch of the Summer Institute of Linguistics, produced a number of texts in the Lokono language. Many of these texts are Lokono stories about events from daily life told by the inhabitants of different villages. Others are tales from the life of Jesus. All the texts come with a Dutch translation, often accompanied by drawings, suggesting that they were written for a younger audience. All these texts are today available online from the webpage of the Summer Institute of Linguistics, and have also been deposited in the Archive of the Lokono Language (see Rybka 2014a and § 2.3.5). Traditional Lokono stories have also been published in a few different publications (Baarle et al. 1989; Bennett 1995; Boven et al. 1989; Patte 2012).

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15 In this section, I highlight only the most important work on Lokono. For more references on the Lokono language, the reader should consult the online Lokono catalogue in Appendix I.
Another evangelical organization, the Global Recordings Network, created digital recordings of short Bible stories told by anonymous Lokono speakers. The recordings are of high quality, and the stories are told in a natural, story-telling manner. The recordings can be found on the webpage of the Global Recordings Network, together with a free translation, and in the Archive of the Lokono Language.\footnote{http://globalrecordings.net/en/program/C20630.} A modern translation of the Testaments, however, has never been taken up, apparently due to the small size of the community of speakers, and the ongoing and conspicuous shift to both lingua francas and the official languages. Attempts to attract Bible translation organizations on the part of the religious groups in the villages did not bring a change. One such organization \textit{Adajali Wabaroseng} ‘God is Our Chief’, based in the village of Matta, Suriname, has been struggling with this problem for a couple of years now. In 2009 supported by the \textit{Surinaams Bijbelgenootschap} ‘Surinamese Bible Society’, and Summer Institute for Linguistics, \textit{Adajali Wabaroseng} recorded a number of new recordings of biblical stories told by fluent elderly speakers. The recordings were later distributed in the form of CDs in the community; the recordings from the workshops can be found in the Archive of the Lokono Language (§ 2.3.5).

The literacy materials available in Lokono also include Lokono songs that were published either as separate publications, or as part of larger volumes (Baarle et al. 1989; Bruin 1992; Penard and Penard 1925). Lokono songs were also recently made popular in Suriname by the Lokono band \textit{Kurupa}, named after the Lokono village \textit{Korhopa} (known as \textit{Matta} in Sranantongo), from which many members of the formation originate.\footnote{https://www.facebook.com/inheemsemuziek.kurupa/?fref=ts.} The band released songs that became immediate number-one hits in Suriname, and even reached the Dutch audience in the Netherlands. This resulted in collaborations with famous Surinamese artists such as \textit{Kayente}.\footnote{http://www.youtube.com/watch?v=NumRnEUQsow.}

However, most literacy materials mentioned here have not been made available to the Lokono people. The availability of literacy materials is therefore very limited. Only in a few households have I seen one or two publications in Lokono, usually a copy of one of the short stories of the Summer Institute of Linguistics. It is therefore a prerogative to make the existing linguistic heritage more accessible to the communities.

### 2.3.3 Orthography standardization

One of the main obstacles that the Lokono community struggled with for a long time when it came to language development, was the lack of a common orthographic standard. To be more specific, the problem was not that there had been no written work on Lokono that could be adopted as a standard. As already clear from sections 2.3.1 and 2.3.2, and as the online catalogue further illustrates, there were in fact quite a few researchers who worked on the language, coming both from within and from outside the community of speakers, and many of them produced written
materials in Lokono. However, each of them adopted their own way of putting the sounds of the language on paper. More importantly, none of these orthographies was ever popularized among the speakers themselves. The authors also paid little attention to explaining the writing rules to the potential readers who are speakers of an unwritten language. In (5) I give an example of the spelling differences between three authors who worked on the language in the last forty years (these are only orthographic differences; the pronunciation is the same).

(5)  
(a)  tsjádêng ‘sting’ (Baarle et al. 1989)  
(b)  thiadyyn ‘sting’ (Pet 1987)  
(c)  thiâdun ‘sting’ (Patte 2011)

I do not discuss the orthographies in detail here, nor the new standard, which is described in Rybka (2013), and is available online. It should be said, however, that it is almost identical to the spelling used in recent publications by Patte. It is worth explaining that there were two types of differences between the different writing systems: those stemming from an erroneous linguistic analysis (e.g., the lack of recognition of long vowels in the work of Pet) or those stemming from an arbitrary choice (usually biased by the linguistic background of the author, as in the case of the palatalized consonants in the work of van Baarle). The former type of differences could be dealt with by improving the analysis of the phonological system of Lokono. The latter, however, are a matter of agreement, and therefore could only be dealt with by discussing what the majority of the Lokono prefer.

The Lokono recognized the lack of a common standard and the problems it entailed. I was first confronted with it in 2009 by a group of women in Apoera—a town on the Surinamese side of the Corentyne River—who were trying to organize a Lokono language course, and found themselves puzzled at how to write their language. A year later, I started working with Kayeno, a Lokono organization in French Guiana, on a common orthographic standard for the Lokono in all three Guianas. Together, we decided on a publication that would:

(6)  
(a)  present the orthographic rules.  
(b)  prefer simpler rules with less exceptions.  
(c)  reflect the Lokono phonological system.  
(d)  explain why these rules are “better” than those in other publications.  
(e)  reach the speakers in the Guianas.  
(f)  be freely available to everyone.  
(g)  involve the community in the creation process.

When the first draft was ready, a week-long workshop was organized to receive feedback from the representatives of the Surinamese and French villages, as well as the Vereniging van Inheemse Dorpshoofden in Suriname ‘Association of Amerindian Village Chiefs in Suriname’. The latter were at the time working on a bilingual mathematics program, which would also make use of the new standard (see § 2.3.4). At the same time, workshop participants decided to set up a foundation to preserve their linguistic and cultural heritage, called Wadian Bokotothi ‘Language Keepers’. In June 2012, the representatives of Wadian Bokotothi and Kayeno
gathered in Georgetown, Guyana, where the orthography was presented to the Guyanese Lokono. Finally, in 2013, the publication entitled *Samen Schrijven in het Arowaks* ‘Writing Together in Lokono’, sponsored by the *Gesellschaft für bedrohte Sprachen* ‘Society for Endangered Languages’, was published in Suriname in 1200 copies. The book was distributed for free in the villages during one-day long orthography workshops, during which the content of the publication was introduced to the participants. A report of the whole process can be found on the webpage of the *Gesellschaft für bedrohte Sprachen*. The book was also immediately made available online for download, for those Lokono who have (mostly mobile) access to the Internet. The book was also received with great enthusiasm in the Netherlands, and was used as one of the materials during a Lokono language course in Amsterdam (§ 2.3.4). In the first months of 2016, the book will be reprinted in English, and distributed among the Guyanese Lokono, thanks to a grant form the Endangered Languages Fund.

2.3.4 Language education

In all three Guianas, and in the Netherlands, there have been recent attempts at developing learning materials, and organizing Lokono classes. Lack of a common writing standard has until now hindered progress in this domain. Therefore there are still no modern Lokono teaching materials for children. The recent developments in orthography standardization described above will change the situation. Nonetheless, the Lokono organizations have not been idle.

In French Guiana the organizations *Kayeno*, based in Saint Rose de Lima, *Hanaba Lokono*, located in Saint Laurent, and *Cécilia Tokorho*, from the village *Cécilia*, have been working on educational materials (e.g., collections of stories, phrase books). However, due to limited funding, few of these projects have been accomplished. *Kayeno*, which has a long record of cultural activities, has also organized occasional classes in local schools, focusing on the Lokono material culture rather than the language. In October 2013, the French organizations prepared an international Lokono seminar attended by Lokono language activists, linguists, and policy makers from the three Guianas in order to tighten international cooperation. Importantly, there are modern educational materials on Lokono in French: *van Baarle, Sabajo, and Patte* (1997) and *Patte* (2008), the former of which is a translation of *van Baarle and colleagues* (1989)—a Lokono language course in Dutch. However, the content of both works is not suitable for a language course, but rather intended as self-study materials for a mature readership. There is also a Lokono-French dictionary, which is mostly a compilation of previously published, but less available, lexicographical work on Lokono (*Patte* 2011).

In Guyana, since the times of Father John Bennett, who wrote a Lokono-English dictionary and a small course book, no modern language educational materials have been developed (*Bennett* 1989; 1995). This is an important gap since the government is eager to support Lokono classes in the settlements. In September

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2013, Father Jones Richards, a fluent speaker of Lokono and an avid Lokono activist, aided by the Guyanese Ministry of Amerindian Affairs, started a ten-month long Lokono course in Capoey village, using Bennett’s materials. The Lokono classes took place three times a week after school, and were attended by children from 5- to 10-years-old. This pilot project is part of a new initiative of the Ministry of Amerindian Affairs, called the Arawak Language Project. It remains to be seen whether the project will continue, and spread to other villages.

In Suriname, since 2008 the Vereniging van Inheemse Dorpshoofden in Suriname ‘Association of the Amerindian Village Chiefs in Suriname’ in collaboration with a Dutch organization called Rutu Foundation has been developing bilingual educational projects, inspired by the Maya and the Garifuna (Arawakan) schools in Belize. The project Natuurlijk Rekenen ‘Counting Naturally’ started with the development of bilingual and culturally appropriate materials for basic mathematics in Kari’na, and was piloted in two Kari’na villages in 2010. In 2011, a Lokono pilot was launched in Powakka and Washabo. The linguistic context of the Kari’na and Lokono classrooms is, however, different. The children who attend the classes in the Kari’na villages speak Kari’na; therefore teaching them mathematics in Kari’na improves their results at school. Lokono is already a heritage language to the children who attend the classes in the Lokono villages; therefore teaching them mathematics in Lokono is a way of teaching them their heritage language. The Lokono specialist responsible for the contents of the mathematics books has also published a short Lokono phrase book.

In the Netherlands, the Lokono community actively collaborated first with Peter van Baarle. This led to the publication of a course book, containing a small dictionary and a few texts (Baarle et al. 1989), which was later translated into French by Patte (Baarle, Sabajo, and Patte 1997). However, the book was designed as a self-study material rather than part of a course, and is written for a mature audience, not for children. In the spring of 2014, a Lokono language course was organized in Amsterdam by the Lokono diaspora organization Amazone Khonanong ‘People of the Amazon’. The course was designed and taught by the present author, and was video-recorded, and published on YouTube in order to reach a wider audience. The participants were twenty ethnic Lokono adults who do not know their heritage language anymore. Similar activities in the Guianas are still hindered by the lack of modern educational materials and the lack of Lokono teachers.

2.3.5 Archive of the Lokono language

In July 2014, the Archive of the Lokono Language (henceforth ALL) was set up, as a “lasting multimedia digital record of the language” (Gippert, Himmelmann, and Mosel 2006:1). The aim of ALL is to provide a platform where all data on Lokono can be deposited, stored securely, and made available to both researchers and communities. It includes language materials in formats such as audio and video, scans of written documents, and photographs. All files come with metadata.

21 Course materials are available at: http://thiscourse.com/uva/lok01/wi14/
The first class is available at: https://www.youtube.com/watch?v=aQ8nkOoM1Ck
including information about the creator, the consultants, the date and location of the
recording, the topic and so forth. The archive includes at the moment mostly
materials documenting the Eastern dialect collected since 2009 by the present
author, which include speech genres such as:

(7) (a) Lokono animistic folklore.
(b) Instructional narratives concerning subsistence practices.
(c) Personal narratives telling the life stories of the speakers.
(d) Descriptions of places within the village territories.
(e) Elicitation sessions focused on spatial language.
(f) Translation sessions.
(g) Scans of publications.
(h) Educational materials.
(i) Biblical stories in Lokono.

Many of the files are accompanied by Lokono transcripts, and sometimes Dutch or
English free translation. Beside these data, the archive also includes scans of older
Lokono documents and recordings created by other authors who have agreed to
deposit their data in the archive, for instance, the already mentioned Global
Recordings Network and the Summer Institute of Linguistics. The Max Planck
Institute for Psycholinguistics in Nijmegen, the Netherlands, hosts the archive,
which can be accessed online through the portal of The Language Archive.22 Some
parts of the archive will be open to the general public without restrictions, while for
other parts a password will have to be obtained from the archive’s curators. There
are also recordings in the archive that pertain to culturally sensitive knowledge that
can only be accessed by a limited number of people. At the moment, the
communities from which the recorded speakers come are discussing the details of
the accessibility protocol.

A large part of ALL contains data documenting the Lokono geographic
knowledge, which are part of the present author’s Ph.D. research. Within this
project, the present author looks at the way natural environment is divided into
geographical features in the Lokono language. In other words, what landscape terms
(common terms) and place names (proper terms) exist in Lokono: What are their
denotations? What are their connotations? What morphosyntactic features do they
exhibit? How are they related to one another and do they form a language-externally
definable class? (see Bohnemeyer et al. 2004; Burenhult and Levinson 2008; Mark
et al. 2011). The data also zoom in on the cultural and social importance of
landscape.23 The ultimate goal of the project is to determine what constitutes Lokono

22 http://tla.mpi.nl/. The Archive of the Lokono Language is located under Donated
Corpora.
23 This part of ALL reflects the preoccupation with land among the Amerindians. In
Guyana the Amerindians have, at least in theory, full control over their territories, although in
practice big companies are encroaching on their territories often without the Amerindians’
permission. In Suriname the government is reported to give away Amerindian land to mining
and logging companies without the inhabitants’ consent and often knowledge (Kambel and
MacKay 1999). Irrespective of the legal situation, the Amerindians of the Guianas are striving
geographical knowledge and what role language plays in this system. This subpart of the ALL zooms in on the Surinamese dialect, in particular the expression of landscape in the speech of the Lokono people living in the Para district, Suriname. The data include elicitation sessions focusing on the grammar of space with tabletop arrangements (Rybka 2010), as well as elicitation sessions focused on geographic-scale phenomena, for instance, landforms, vegetation assemblages, and water features (Rybka 2014b; 2015b). The data contain also a number of narratives about particular places within the territory of Cassipora village, and their cultural significance to the people. This part of ALL forms the basis for the description of the linguistic encoding of landscape given in this thesis.

Another interdisciplinary project exploring Lokono knowledge systems is the initiative started in 2007 by the National Museum of Ethnology in Leiden, the Netherlands. The project’s main aim was to study its Surinamese collections from a plurivocal angle, thereby enhancing our knowledge of the artifacts and their contexts of use (Buijs, Hovens, and Broekhoven 2010). The project opened up the museum’s depots to a group of representatives of the Amerindian people, and discussed the collections with them during consultation sessions. Following Wayana and Kari’na in 2007, and Trio and Kari’na in 2009, in 2010 the representatives of the Wayana and the Lokono were invited. During week-long consultations, the Lokono experts together with specialists on Amerindian cultures of Suriname (archeologists, anthropologists, and linguists, including the present author) discussed a number of artifacts. The Lokono experts provided add-on commentaries concerning, among other things, ritual objects, feather collections, headdresses, clubs, and musical instruments, with particular focus on the Lokono names for the materials, techniques of production, and uses of the artifacts. The consultations were filmed, and the present author is negotiating the depositing of the videos in the Archive of the Lokono Language.

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to demarcate their territories. This applies to the Lokono as well. In 2010, the Lokono villages in West Suriname presented their first results: a map, a report of archival research concerning the settlement of the area (Jong 2007), and a book describing the modern Amerindian forms of land use (VIDS 2008). Later, in 2010, the Surinamese Lokono attended a cartographic training in Rio Branco, organized by Instituto Internacional de Educação do Brasil. In 2012, Amazone Conservation Team organized a similar workshop in Suriname. In 2014, another demarcation training took place in the village of Pierre Kondre, Para district, Suriname. The collaborations between the Amerindian communities and museums are also taking root in the Guianas. In 2012, the Musée des Cultures Guyanaises ‘Museum of Guyanese Cultures’ in French Guiana, the Stichting Surinaams Museum ‘Surinamese Museum Foundation’ in Paramaribo, and the Museo Paraense Emílio Goeldi in Belem organized a heritage workshop in order to discuss with the Amerindians the preservation of historical and cultural heritage. As part of the project, the digitized collections of the museums are also being deposited on computers in the villages for the communities to browse through and comment on.
2.4 Conclusions

In the sections above, I looked at a number of factors that are crucial to the assessment of the vitality of a language. I used UNESCO’s framework, which applies the following ranking system:

\[(8)\]

- 0 = extinct
- 1 = critically endangered
- 2 = severely endangered
- 3 = definitely endangered
- 4 = unsafe
- 5 = safe

The scores are summed up in Table 5 below. They have been presented by country, although the differences between the three nation-states are not of great importance.

<table>
<thead>
<tr>
<th>Number of speakers</th>
<th>Guyana</th>
<th>Suriname</th>
<th>Fr. Guiana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intergenerational language transmission</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Domains of use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Shifts in domains</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>- Response to new domains</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Language attitudes and policy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Governmental/Institutional</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>- Community’s</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Language documentation</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Literacy and educational materials</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

The vitality assessment itself, however, is not a matter of simply adding scores, as language vitality is deeply entrenched in the community’s linguistic, social, historical, economic, and political context:

*The vitality of languages varies widely depending on the different situations of speech communities. The need for documentation also differs under varying conditions. Languages cannot be assessed simply by adding the numbers; we therefore suggest such simple addition not be done. Instead, the language vitality factors given above must be examined according to the purpose of the assessment.*

UNESCO (2003:17, original emphasis)

In keeping with the above, it is important to make explicit the aim of the assessment. The aim of this chapter is to facilitate cooperation between the Lokono communities and researchers. It is therefore important to establish the trajectory, in which the vitality of Lokono is changing. Let us, therefore, look at the scores in Table 5 from a diachronic perspective. This angle reveals two different trends in the factorial
analysis. On the one hand, we see a decrease in scores of the following four factors: number of speakers, intergenerational language transmission, shifts in domains, and response to new domains. On the other hand, there is on the whole an increase in scores of the remaining factors—that is, governmental and institutional attitudes, policies, availability of literacy and educational materials, and language documentation.

It is important to notice that the first three factors reflect the state of the language itself. Lokono is clearly critically endangered. The community of speakers is shrinking, the language is not transmitted to children anymore, its domains of use are limited, and it is inactive with respect to new domains. The other four factors reflect the involvement of all parties in improving this very state. The language attitudes in the community are becoming more positive; the speakers are becoming more aware of language loss, and are beginning to take steps to revive their language. The governmental attitudes are improving, although clear differences between theory and practice still exist. Finally, language documentation and language development activities are slowly gaining momentum.

The question remains whether this positive trend can counterbalance the negative one, and what the focus should be in order to maximize the outcomes of future projects. Clearly, at the moment the biggest challenge for the Lokono communities is the lack of professional Lokono educational materials. The creation of such materials should therefore be prioritized. The language has been documented enough to allow for the development of such materials, based on the available grammars and the primary linguistic data amassed in the Archive of the Lokono Language. The second obstacle that the Lokono face is the lack of skilled teachers. The teachers who work in Lokono villages are either not Lokono, or are from the cohort that already shifted to other languages. The Lokono organizations listed in Appendix II are interested in collaboration with researchers in order to document and develop the Lokono linguistic and cultural heritage further. The emerging Archive of the Lokono Language is a result of such collaboration, and will hopefully facilitate future work aimed at revitalizing Lokono, on the one hand, and stimulate further research on the Lokono language and culture, on the other.
3. Sketch grammar of space

This chapter sets the stage for the discussion of the linguistic features of landscape terms presented in the remainder of the thesis by sketching out the most important features of Lokono grammar, particularly of the Lokono grammar of space. Bearing in mind that this thesis was written as a collection of self-contained articles, it should come as no surprise that this general introduction repeats parts of the sections that follow. Each chapter contains a short grammatical introduction relevant to and sufficient for the exposition of the argument presented in the article it is based on. This chapter brings together these brief grammatical outlines, significantly elaborates on them, and establishes internal links between the chapters to come. The main focus of this chapter is the grammar of space—that is, the linguistic means employed in Lokono to express spatial relations (Levinson and Wilkins 2006). This semantic domain in Lokono has not been accounted for in a systematic and detailed manner before. It has to be acknowledged, however, that the description presented here builds upon previous studies of the language, most importantly the work of Patte, Pet, and van Baarle (e.g., Patte 2003; Pet 1987; Baarle et al. 1989). The interested reader is advised to consult the work of these authors, as well as other published materials listed in the Lokono catalogue given in the online Appendix I for further information on the Lokono language and culture.

The grammatical sketch presented below develops in the following order. First, I comment on the methodological underpinnings of the research and the type of data presented here (§ 3.1). Second, I give an account of the linguistic features of person-marking, which transcend the division into the two main word classes of nouns and verbs (§ 3.2). Importantly, the distinction between nouns and verbs is not clear-cut in Lokono. I therefore do not commit myself to the concepts of noun and verb as clearly defined classes in Lokono. I do, however, in the remainder of the thesis use these labels out of convenience. Third, I describe the features of Lokono nouns, including a number of forms that are at the periphery of the nominal domain, many of which are central to the spatial language (§ 3.3). Fourth, I provide a typology of Lokono verbs, distinguishing active verbs, stative verbs, and the empty verb o/a (§ 3.4). Building on the analysis of verbal and nominal forms, I provide a classification of Lokono clause types (§ 3.5). The different clause types are the underlying structures, through which spatial relations can be expressed. I then turn to the description of spatial language, starting with a detailed account of the Basic Locative Construction—that is, a stative verb clause that is the most frequent structure employed to encode spatial relations in Lokono (§ 3.6). It is in this subsection that I also introduce the what/where distinction discussed in detail in later chapters. Subsequently, I look at the functionally determined alternatives of the Basic Locative Construction. The Posture Construction is a type of an empty verb clause, which is used to encode the posture of the referent that needs to be located (§ 3.7). I then give a description of the Locative Equation—an equative clause used

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25 I want to thank Kees Hengeveld, Eithne Carlin, and Enoch Aboh for their comments this chapter.
predominantly to express spatial relations that are seen as permanent (§ 3.8). Following the analysis of the three types of locative constructions, I introduce the Lokono system of deictic forms (§ 3.9). Last but not least, I provide an overview of the linguistic means of encoding motion in Lokono (§ 3.10). I finish the grammatical sketch with a few notes on locative relative clauses, locative adverbial clauses, locative complement clauses and locative questions (§§ 3.11 and 3.12, respectively). Throughout this description of the grammar of space, I incorporate landscape terminology as much as possible through numerous examples and analyses thereof. I also consistently point out which parts of the grammatical description anticipate the following chapters devoted solely to the landscape domain.

### 3.1 Data and methodology

The data upon which the description presented here is based have been collected using a number of stimuli developed for the specific purpose of eliciting spatial language. Table 6 lists the experiments I conducted with the Lokono speakers, together with the linguistic domains they zoom in upon. The stimuli have been used before by other researchers to document and describe spatial expressions in a number of languages, which adds a comparative angle to the present analysis (e.g., Ameka and Levinson 2007; Levinson and Wilkins 2006). The participants included both men and women. The minimum number of participants per experiment was three—when there was consensus among the speakers’ responses I ceased further investigation. The maximum number of participants was ten. On the whole, the only task which led to contradicting results was the Man and Tree experiment (Levinson et al. 1992)—the provisional results of which are reported on below as well.

<table>
<thead>
<tr>
<th>Name of stimulus (authors)</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topological Relation Picture Series (Bowerman and Pederson 1992)</td>
<td>topology</td>
</tr>
<tr>
<td>Picture Series for Positional Verbs (Ameka, Witte, and Wilkins 1999)</td>
<td>positional verbs</td>
</tr>
<tr>
<td>Motion Verb (Levinson 2001)</td>
<td>motion verbs</td>
</tr>
<tr>
<td>Frog where are you? (Mayer 2003)</td>
<td>motion verbs</td>
</tr>
<tr>
<td>Event Triads (Bohnemeyer, Eisenbeiss, and Narasimhan 2001)</td>
<td>motion verbs</td>
</tr>
<tr>
<td>Man and Tree (Levinson et al. 1992)</td>
<td>frames of reference</td>
</tr>
<tr>
<td>Motionland (Bohnemeyer 2001a)</td>
<td>motion verb</td>
</tr>
<tr>
<td>Demonstrative Questionnaire (Wilkins 1999)</td>
<td>deixis</td>
</tr>
<tr>
<td>Deixis and Demonstratives (Levinson 1999)</td>
<td>deixis</td>
</tr>
<tr>
<td>Elicitation Guide on Body Part Terms (Enfield 2006)</td>
<td>body part terms</td>
</tr>
<tr>
<td>Put Project (Bowerman et al. 2004)</td>
<td>placement verbs</td>
</tr>
</tbody>
</table>

The following sections are based as much on the results of the experiments listed in Table 6 as on the data from the corpus of narratives created during regular periods of fieldwork in Suriname since 2009—fourteen months in total (Rybka 2014a). The corpus includes genres such as traditional animistic folklore, instructional narratives
about subsistence practices, personal life stories, descriptions of places, and narrated biblical stories. As such, the corpus provides an opportunity to observe spatial language in a more neutral context than the elicitation sessions. Most of the general linguistic features of Lokono and of the grammatical encoding of spatial relations described here are further illustrated in a robust linguistic context in the traditional Lokono story given in the online Appendix IV. Occasionally examples are also given from other sources, in which case the glossing is by the present author.

3.2 Person-marking

Lokono person-marking permeates most of the lexicon—it is found on both nouns and verbs, as well as on a handful of forms that belong in the penumbra of the nominal domain and could be classified as postpositions (§ 3.3.6). It is therefore crucial to the grammar of the language as a whole and the landscape vocabulary. Lokono distinguishes two sets of bound person markers and one set of free pronouns, listed in Table 7. The bound forms are grouped into two series: personal prefixes, called the A-class, and personal enclitics, called the B-class. Personal prefixes (the A-class) and pronouns are used to encode the subject of (active) verbs and the possessor of nouns, therefore I discuss person-marking before the two open word classes are introduced. Demonstrative pronouns, which can also function as 3rd person pronouns, are marked in Table 7 with an asterisk, but are discussed separately together with other deictic forms (see § 3.9.1.1).

<table>
<thead>
<tr>
<th>Person</th>
<th>Number</th>
<th>Gender</th>
<th>Humanness</th>
<th>Pronouns</th>
<th>Bound forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>SG</td>
<td></td>
<td></td>
<td>dei/dai</td>
<td>da= =de</td>
</tr>
<tr>
<td>1st</td>
<td>PL</td>
<td></td>
<td></td>
<td>wei/wai</td>
<td>wa= =we</td>
</tr>
<tr>
<td>2nd</td>
<td>SG</td>
<td></td>
<td></td>
<td>bi</td>
<td>bu= =bo</td>
</tr>
<tr>
<td>2nd</td>
<td>PL</td>
<td></td>
<td></td>
<td>hi</td>
<td>hu= =hu</td>
</tr>
<tr>
<td>3rd</td>
<td>M</td>
<td>M</td>
<td></td>
<td>li*</td>
<td>lu= =dei/=i</td>
</tr>
<tr>
<td>3rd</td>
<td>F</td>
<td>F</td>
<td>HUMAN</td>
<td>to*</td>
<td>thu= =no</td>
</tr>
<tr>
<td>3rd</td>
<td>PL</td>
<td></td>
<td>HUMAN</td>
<td>na*, nci/nai</td>
<td>na= =ye</td>
</tr>
</tbody>
</table>

The person markers listed in Table 7 distinguish 1st, 2nd and 3rd person. In the 1st and 2nd person there is also a number distinction (singular/plural). In the 3rd person, a gender split is introduced (masculine/feminine); both the feminine and masculine 3rd person forms are unspecified for number. Finally, there are also 3rd person forms restricted to plural human referents. Humanness, however, is defined in terms of the membership in the Lokono ethnic group. Members of other ethnic groups are normally indicated with the 3rd person feminine forms, which can refer to both singular and plural referents.
3.2.1 Personal prefixes, enclitics, and pronouns

Personal prefixes may adapt to the phonological form of the root they are attached to. If the root begins with a vowel, one of the vowels, either the vowel of the root or that of the prefix, has to be deleted. Vowel deletion happens in keeping with the cline in (9), showing that the vowels to the right tend to be replaced by the vowels to the left.

\[(9) \quad \text{Long vowels} > /a/ > /o/ > /e/ > /i/ > /i/ \]

In the case of the combination /a/ + /i/, a diphthong is formed, pronounced either as /ai/ or as /ei/, in Guyana and Suriname, respectively. The weak vowel /i/ of the prefixes can also harmonize with the first vowel of a consonant-initial root. Finally, the aspirated consonant /tʰ/ of the 3rd person feminine prefix is palatalized in the Suriname dialect if the vowel of the prefix is replaced by /i/ or /i/. These phonological processes also apply to the attributive, privative, and the expletive prefixes discussed below. In Table 8, the prefixes are combined with inalienable nouns (both given in their phonological form), demonstrating some of the most common phonological adaptations discussed above that typify Surinamese Lokono.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Noun</th>
<th>Meaning</th>
<th>Possessed</th>
<th>Meaning</th>
<th>Process involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>da–</td>
<td>i:ri</td>
<td>name</td>
<td>deiri</td>
<td>my name</td>
<td>diphthongization</td>
</tr>
<tr>
<td>wa–</td>
<td>oyo</td>
<td>mother</td>
<td>wayo</td>
<td>my mother</td>
<td>vowel deletion</td>
</tr>
<tr>
<td>bi–</td>
<td>ida</td>
<td>skin</td>
<td>bida</td>
<td>your skin</td>
<td>vowel deletion</td>
</tr>
<tr>
<td>hi–</td>
<td>pe:ro</td>
<td>dog</td>
<td>hepe:rõŋ</td>
<td>your dog</td>
<td>vowel harmonization</td>
</tr>
<tr>
<td>li–</td>
<td>ari</td>
<td>tooth</td>
<td>lari</td>
<td>his tooth</td>
<td>vowel deletion</td>
</tr>
<tr>
<td>tʰi–</td>
<td>itʃi</td>
<td>father</td>
<td>tʃiʃi</td>
<td>her father</td>
<td>palatalization, vowel deletion</td>
</tr>
<tr>
<td>na–</td>
<td>isa</td>
<td>child</td>
<td>nasa</td>
<td>their child</td>
<td>vowel deletion</td>
</tr>
</tbody>
</table>

The set of free pronouns is derived from the set of prefixes by the addition of the particle i. ²⁶ The same phonological adaptations are at work here as well (e.g., da– + i → dei). Interestingly, there are clear formal correspondences between the free and bound forms in the 1st and 2nd person, but not in the 3rd person, where the gender distinction is introduced. The 3rd person enclitics are in turn related to gender markers, the masculine –i, and the feminine –o. The 3rd person masculine enclitic =dei is most likely a combination of the evidential enclitic =da, signaling first-hand knowledge, and the masculine gender marker –i, which today still functions as a 3rd person masculine enclitic. The 3rd person feminine enclitic =no may be the result of

²⁶ Such internal structure of free pronouns is in keeping with Arawakan tendencies. According to Aikhenvald (1999:85) free pronouns in Arawakan languages "consist of a cross-referencing prefix and an emphatic one-syllable particle"—that is, the particle i in the Lokono case.
the reanalysis of the event nominalizer –n combined with the feminine gender marker –o. Both these processes may have had little semantic motivation and are rather the result of the frequent concurrence of the morphemes at the end of the predicate.

Morphosyntactically, the three types of person markers given in Table 7 are used to encode distinct functions. Personal prefixes encode the possessor on nouns and the subject of active verbs (§§ 3.3.3 and 3.4.1, respectively). Personal prefixes cannot co-occur with full expressions of the subject or possessor preceding the verb or noun, respectively. These prefixes, called the A-class, are always glossed with a subscript capital A. The 1st person prefix da–, for instance, is always glossed simply as 1SG.A, and not as 1SG.A, 1SG.Ś, or 1SG.POSS, since the language does not make such fine syntactic distinctions.

Perso

nal enclitics, on the other hand, encode the subject of stative verbs and the object of transitive verbs (§ 3.4.1). The enclitics form the B-class, and are consistently glossed with subscript capital B, since the language does not distinguish between the marking of the object of transitive verbs and the subject of stative verbs. Summing up, it is worth pointing out that the class of intransitive verbs is split into two groups, those that combine with personal prefixes (intransitive verbs encoding activities) and those that combine with personal enclitics (intransitive verbs encoding states) to express the subject. Such active/stative split of intransitive verbs is typical of Arawakan languages (e.g., Aikhenvald 1999). In Lokono the split of intransitive verbs is motivated by the meaning of the verb only, as opposed to languages in which it can be motivated by, for instance, tense and aspect. Importantly, all transitive verbs, irrespective of their meaning, fall into the active verb category.

Finally, the free pronouns and the demonstrative pronouns can be used to express the possessor of nouns as well as the subject and object of verbs (see also § 3.9.1.1 on demonstratives). They are glossed therefore without any subscripts. However, similarly to other Arawakan languages, free pronouns are used in Lokono mostly for topicalization (Aikhenvald 1999:85). The prefixes and enclitics are preferred if the referent is already established in the discourse or needs to be backgrounded. Personal enclitics similarly to personal prefixes do not normally co-occur with subjects expressed by full noun phrases (see § 3.5.2).

3.2.2 Expletive, attributive, and privative prefixes

In Lokono there are five other prefixes—namely, the privative ma–, the attributive ka–, and the expletive m–, k–, and V–, where V stands for a vowel typically harmonized with the first vowel of a consonant-initial form, to which the prefix is attached. The expletive prefix V– used to be attached to verbs and possessed nouns if the subject, or possessor in the case of nouns, was expressed by a full noun phrase preceding the verb or the possessed noun. Personal prefixes cannot co-occur with such full expressions of the subject or possessor preceding the verb or noun, respectively. The function of the prefix V– was purely to fill in the prefix slot on the verb or the possessed noun, thereby cross-referencing the full noun phrase. Today the expletive prefix is not in common use, although it occasionally appears in the data. Example (10) comes from a discussion of the history of Cassipora village,
during which the speaker regrets that it was never put on paper. The speaker did not harmonize the vowel in keeping with the general harmonization rule, which may be taken as an additional token of the obsolete character of the expletive prefix.

(10) to kharasahu udiako
to kʰarasa-hi i-d’ako
DEM:F scratch-ABST:NM LZ EXPL-top
‘in writing (lit. ‘scratching’).

In (10), the expletive prefix V– cross-references the noun kharasahu ‘writing’. Today the expletive prefix can be omitted without affecting the grammaticality of the phrase. The context of the rare cases in which it is found in the corpus, such as (10), suggest that it may have gained an emphatic function today. The expletive prefix is also fossilized in a few nouns. Take as an example the spatial term anakhubo ‘right in the middle’—a combination of nakan ‘middle’, the precision suffix –bo, and the expletive prefix V– realized as the word-initial a–. Finally, a rare but interesting case of the use of the expletive prefix V– today is to disambiguate the meaning of the form mun (§3.6.3.2). When unmarked, mun can be read as the free dative marker mun or as the obsolete bound form of the location and goal directionality marker –mun. When combined with the expletive prefix, umun can only be analyzed as the free dative marker. In sum, the expletive prefix V– is not productively used, it is never obligatory, and today only appears to emphasize or disambiguate a handful of expressions.

The privative prefix ma– and the attributive prefix ka– are found across the Arawakan language family; so much so that they function as one of the diagnostic features of family membership (Aikhenvald 1999). In Lokono, the privative typically derives negative stative verbs meaning ‘not have’, for instance, mashikwan ‘not have a house’, derived from the possessed form shikwa ‘house.Poss’. Analogically, the attributive prefix ka– derives stative verbs meaning ‘have’, for instance, kashikwan ‘have a house’ (see §3.4.4 for further discussion of both prefixes). Interestingly, apart from the expletive prefix V–, there are two other expletive prefixes—namely, m– and k–. The two prefixes are in complementary distribution with the prefix V– and may be related to the privative and the attributive prefix, respectively.

The expletive prefix m– is formally similar and possibly related to the privative prefix ma–, but it has a clearly different function. The two prefixes are therefore glossed as different forms. The expletive prefix m– appears with the empty verb o/a only, in which case it cross-references a subject expressed by a full noun phrase preceding the verb (see also §3.5.4 on empty verb clauses), as in (11).27 The expletive prefix m– is never used with nouns.

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27 As explained above, the prefix V– is expected in such cases, but since the empty verb is a single changeable vowel, the use of the prefix V– is not distinctive enough. It would lead to a single long vowel, /aː/ or /oː/, both of which are possible forms of the empty verb itself.
(11) *Aba mafathi balâko ma waboroko kosa.*

> aba m–afa–tʃi bala–ko m–awaboroko kosa

INDF PRV–sight–SBJ.REL:M sitting.on.bottom–CONT EXPL–E.V road near

‘A blind man was sitting by the road.’

In (11), the main verb is the empty verb—a semantically empty verb that often links the subject to a non-verbal predicate, typically an adverbial expression (see §3.4.2). In (11), the use the empty verb is triggered by the adverb *balâko*, derived from the posture root *bala* ‘sitting on one’s bottom’ with the adverbializer *–ko*, which has a continuative meaning (see §3.5.4.1). The subject is expressed by the noun phrase *aba mafathi*, with the indefinite article *aba* and a complex nominalization *mafathi* ‘blind man’. Since the subject is expressed by a full noun phrase preceding the verb, personal prefixes cannot appear on the empty verb. Neither is the expletive prefix *V–* of any use. In such cases, the specialized expletive prefix *m–* is employed.

The expletive prefix *k–* is found with a limited number of forms—notably, the verbs *âmunin* ‘have’ and *anshin* ‘love’. Such verbs can optionally appear with the prefix *k–* if the subject is expressed by a full noun phrase preceding the verb. In such cases, the verb can be prefixed with the expletive *k–*, forming *kâmunin* and *kanshin*, respectively. The expletive prefix *k–* cross-references the subject noun phrase but it can always be dropped without affecting the grammaticality of the sentence, similarly to the expletive prefix *V–*. It is possible that the two prefixes, *V–* and *k–*, were in the past in complementary distribution. The former combined with consonant-initial bases, the latter with vowel-initial bases, except for the empty verb *o/a*, in which case the expletive prefix *m–* is employed. In sum, it is worth noticing that the privative and attributive prefixes may have been the source of the two expletive prefixes *m–* and *k–*, both of which are in complementary distribution with the expletive *V–*.28

Important for the analysis of spatial language is the fact that the attributive prefix *ka–* is also found with configurational nouns in the special case of encoding reciprocal spatial relations (§3.7.4). In such contexts, neither of the entities involved is profiled as the Figure—the entity to be located—or the Ground—the entity with respect to which the Figure is located. Instead, both entities, function as the Figure and the Ground with respect to each other. The configurational noun *kosa* encoding the spatial region ‘near’, for instance, can be combined with the attributive prefix forming the predicate *kakosan*, as in (12).

---

28 It is not entirely clear why the prefix *k–* does not appear on the empty verb instead of *m–*, thereby forming a more regular paradigm. It is worth noting, however, the combination *ka*, which would be one of the results of combining the expletive *k–* and the empty verb *o/a*, is homophonous with one of the most frequent TAM suffixes—namely, the perfective *–ka*. The other resultant combination—namely, *ko*—corresponds to the adverbializer *–ko*. This may have prevented the use of *k–* with the empty verb. The combination *ma*, is homophonous with the abilitative suffix *–ma*, which is much less frequent, while the combination *mo* is unique.
Kakosakada no.
ka–kosa–ka=da=no
ATR–near–PFV=DIREC=3fR
‘They are near each other.’

In cases such as (12), the attributive meaning is discernible. In the classic attributive scenario, the referent of the subject is attributed an entity, for instance, a house. In the case of configurational nouns encoding reciprocal spatial relations such as kosa ‘near’, the referent of the subject is attributed a spatial region. The subject in (12) encodes a plural referent; both of which are attributed a spatial region kosa ‘near’. It is the semantic content of the noun kosa ‘near’, which is reciprocal in nature, that differentiates such cases from the typical attributive examples. Were the attributive prefix substituted by a 3rd person feminine prefix thu–, the sentence could only be read ‘This is near that’—that is, not a reciprocal relationship, but one in which the subject is profiled as the Figure and the possessor of the configurational noun as the Ground. Such instances of the prefix ka– are therefore consistently glossed as attributive, although they represent a departure from the classic attributive meaning.

3.3 Nouns

Lokono nouns are categorized along a few different dimensions—namely, gender, number, and possession discussed below (§§ 3.3.1, 3.3.2, and 3.3.3, respectively). In this section, I also elaborate on the Lokono encoding of definiteness and specificity (§ 3.3.4). I then turn to the morphosyntactic processes used to coin nominal expressions, specifically in the domain of flora and fauna—a sizeable semantic domain in Lokono (§ 3.3.5). Last, I discuss the penumbra of the nominal domain—that is, a number of forms that straddle the border between nouns and adpositions (§ 3.3.6). Lokono nouns are also grouped into what- and where-nouns, a distinction, which is one of the main narrative threads of this thesis, and is discussed in detail throughout the following chapters. The topics discussed here are of direct relevance to the analysis of Lokono landscape terms. The gender distinction features prominently in the discussion of terms for ecotopic patches derived from names of plant species (chapter 5). The gender dichotomy is employed in this domain to differentiate terms for dry ecotopes from terms for wet ecotopes. Number, definiteness, and specificity are relevant to the study of place names (chapter 6). Place names, as terms referring to unique entities, cannot be combined with the exponents of plurality and collectivity. On the other hand, the deictically unmarked demonstratives that function as definite articles can modify both proper and generic terms. The possessive paradigms of landscape terms reflect the cultural practices in which their referents are embedded. The possessive paradigms of inalienable nouns, and the features of nominal outliers are crucial to the understanding of the morphosyntactic behavior of relational and configurational terms. These two types of nouns are the building blocks of the Basic Locative Constructions as well as of the numerous landform terms (§ 3.6 and chapter 4, respectively). Finally, the morphosyntactic means of coinining new nominal expressions, found in other robust
domains such as ethnobiology, provide us with a general template, against which the internal structure of landscape terms can be compared.

3.3.1 Gender and humanness

Lokono nouns belong either to the masculine or the feminine agreement class. However, few nouns have morphological exponents of gender. All those nouns are complex forms, though not necessarily synchronically transparent. From a diachronic perspective –o and –i are the feminine and masculine gender markers, respectively. The gender morphology is, however, only partially analyzable, and includes the respectively feminine and masculine gender markers –ro/–li, their specificity equivalents –koro/–kili, the subject relativizers –tho/–thi, and the derivational suffixes –do/–di occasionally found in family names. Examples of nouns with morphological exponents of gender include the masculine noun wadili ‘man’ and the feminine noun hiyaro ‘woman’, which are not synchronically analyzable. Gender morphology can be found also in analyzable place names, such as Madisero, derived from the verb madisen ‘lack game’ with the feminine –ro. Most nouns, however, are not morphologically marked for gender, and their agreement class manifests itself only through other gender-marked elements in the utterance such as the 3rd person prefixes and enclitics discussed above, but also verb marked by relativizers and demonstratives (§§ 3.4.6 and 3.9.1.1, respectively). All gender-marked forms are listed in Table 9.

<table>
<thead>
<tr>
<th>Table 9. GENDER-MARKED FORMS IN THE LOKONO GRAMMAR.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
</tr>
<tr>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>DERIVATIONAL (VERBS)</td>
</tr>
<tr>
<td>Specificity markers</td>
</tr>
<tr>
<td>Subject relativizers</td>
</tr>
<tr>
<td>Meaning uncertain</td>
</tr>
<tr>
<td>Demonstratives</td>
</tr>
<tr>
<td>3rd person prefixes</td>
</tr>
<tr>
<td>3rd person enclitics</td>
</tr>
</tbody>
</table>

Although gender is not a derivational category for nouns, the four forms labeled derivational in Table 9 function also as nominalizers, and are therefore a

29 The suffixes –di and –do are typically attached to place-denoting nouns, and derive nouns that have a general meaning ‘entity characterize by the location encoded by the base’, for instance, lokhodo ‘contents’, from the configurational noun loko ‘inside’ or konokhodo ‘Maroon’ from the noun konoko ‘forest’. They are also frequently found in the names of families, which suggests that these two are derived from place-denoting nouns, for instance, karhowfodo and karhowfodi, the female and male of the same family, the name of which may be ultimately derived from karhow ‘savanna’. If this analysis is correct, the two suffixes would be derivational suffixes that are limited to place-denoting nouns—that is, where-nouns, discussed in further chapters.
derivation category for verbs. Such uses of the gender markers –li and –ro, as well as their specificity equivalents –kili and –koro, are important to the discussion of ecotope terms and place names (chapters 5 and 6, respectively).

As a rule, the masculine gender is restricted to nouns denoting Lokono males, to the exclusion of nouns denoting men from other ethnic groups, such as other indigenous peoples, Maroons, and people of European descent. Gender-marking thus establishes a dichotomy between the insiders (Lokono men) and outsiders (other men). All other nouns are treated grammatically as feminine. Example (13) illustrates how gender agreement operates on a clause level. The utterance comes from a narration of a biblical story about a poor widow recorded during a Bible translation workshop organized by the Summer Institute for Linguistics in Paramaribo.

(13) *Tora hiyaro, kamonēkatho, therethi ōda koba hibin.*

to–ra hiyaro ka–mone:ka–Po

DEM–MED woman ATR–grief–SBJ.REL:F

\[ i^{\text{th}}\text{e}–\text{retʃi} \quad \text{o:da}=\text{koba} \quad \text{hibi}=\eta \]

3f–husband die=REM.PST already–NMLZ

‘That woman, (she was) a poor one, her husband died already long ago.’

In the first clause of example (13), the main protagonist is referred to as *hiyaro* ‘woman’, a noun denoting a female, which has a lexicalized morphological exponent of feminine gender, the feminine marker –ro. Its modifier, the medial feminine demonstrative *tora*, is in gender agreement with the noun. The whole expression functions as the argument of a nominal predicate that follows, forming a non-verbal equative clause. The nominal predicate consists of the derived stative verb *kamonēkan* ‘grieve’ (lit. ‘have grief’), nominalized with the help of the feminine relativizer –tho. In the second clause of (13), the feminine gender is also expressed by the 3rd person feminine prefix, cross-referencing the noun *hiyaro*. The prefix encodes the possessor of the inalienable masculine noun *rethi* ‘husband’, which itself contains a lexicalized masculine relativizer –thi.

The Lokono general gender assignment rule does not always apply. Under certain circumstances the masculine gender can be extended to nouns denoting referents other than Lokono males. This happens if the referent is important, dear, or in any other way individuated to the speaker. It is, for instance, quite common to use the masculine gender with reference to dogs and monkeys that are domesticated pets—that is, animals that are part of the household. Interestingly, exemplars of the same species, for instance, *fodi* (*Cebus apella*) can be treated as pets, and as such cannot be eaten, or as game, in which case they are hunted and eaten. This is reflected in the use of the gender-marked forms in the language. The gender extension rule does not apply to nouns denoting women, which are always grammatically feminine irrespective of how important, dear, and individuated their referents are. The extension of masculine gender to other nouns is exemplified in (14), in which the speaker talks about his hobbies, one of which is fishing. *Horhishiri* is a small type of the *horhi* fish (*Macrodon intermedius*) that he often catches.
In (14) the main predicate is a transitive verb bodeshan, derived from the noun bode ‘hook’ with the verbalizing suffix –sha, the exact meaning of which is not yet clear (vis-à-vis the more common verbalizing suffixes –tV and –dV discussed in § 3.4.3). The subject of the verb is encoded by the 1st person prefix attached to the verb, while the object is expressed by two preposed appositional phrases. First, the speaker decided to use the masculine demonstrative li with the noun horhishiri, which normally requires a feminine modifier. Second, the same masculine demonstrative, which functions both as a modifier and as a pronoun, appears on its own in its pronominal function. Both the noun, and the demonstrative are combined with the collective suffix –be indicating multiplicity of referents. The choice of the masculine gender is motivated here by the intention to express the smallness of this particular species of fish and the affectedness concomitant with it, signaled also by the use of the diminutive enclitic =khan.

Summing up the masculine gender is used with nouns denoting Lokono men. However, referents that are dear, familiar, or for any other reason individuated to the speaker can be optionally treated as masculine as well. Such examples are not uncommon, and a few cases are mentioned in the following chapters. An interesting case of the use of the gender distinction, encoded by the masculine –li, and the feminine –ro suffixes, is mentioned in the analysis of the meaning of terms for ecotopic patches (chapter 5). I argue that in this specific domain, the masculine and feminine morphological gender marking could have functioned as a beacon of warning to the speakers. The masculine gender marker extends to terms for dry ecotopes, which should normally be feminine. This distinguishes terms for dry ecotopes from terms for wet ecotopes derived with the feminine gender marker. Such wet ecotopes are regularly associated with the presence of the malevolent water spirit oriyo, which may have justified their gender in the light of the occasionally positive associations of the masculine forms (see chapter 5 for details).

3.3.2 Number and collectivity

With respect to the category of grammatical number, Lokono nouns are subdivided into three groups—namely, singular object nouns, set nouns, and mass nouns (Rijkhoff 2002:54). Singular object nouns encode a singular entity; this class includes only nouns denoting Lokono people, such as reitho ‘wife’ and other kinship terms. The nouns basari ‘Kari’na’, faretho ‘Caucasian’, and dorhi ‘Maroon’ are normally not included in this category. Singular object nouns combine directly with numerals, and are obligatorily marked for plural number when referring to plural referents. Example (15) comes from a description of a landform photograph, in which two Lokono women are walking up a hill.
In (15) the numeral *bian* ‘two’ modifies the noun *hiyaro* ‘woman’, which encodes a singular entity, and therefore needs to be combined with the plural suffix *–non* to signal plurality. This preposed phrase functions as the direct object of the verb *dikhun* ‘see’, the subject of which is expressed by the 1st person prefix.

Set nouns, on the other hand, do not encode any information about the number of referents denoted—they are transnumeral. This is reflected in the morphological behavior of set nouns. Whether with or without a numeral, they always remain unmarked for number; they cannot attach the plural suffix *–non*. This class includes terms for other animate entities (animals and members of other ethnic groups), as well as all inanimate entities, including terms such as *kasakabo* ‘day’ in the following example from another adaptation of a biblical story.

In (16) the numeral *bian* ‘two’ modifies the noun *kasakabo* ‘day’ which encodes a set of unspecified number (from one to infinity), and remains unmarked for plurality. The phrase is followed by the temporal marker *diki* ‘after’ (lit. ‘footstep’), forming an adverbial time expression modifying the predicate. The predicate consists of the motion verb *andiun* ‘arrive’, the subject of which is expressed by the 3rd person masculine prefix.

Both singular object nouns and set nouns can take the collective suffix *–be*, which we saw already in example (14) attached to the noun *horrhishiri*, denoting a type of fish. The collective suffix signals the multiplicity of referents, and can be used both in combination with numerals as well as without them, for instance, *bian wadilibe* ‘a group of two men’, or *onikhanbe* ‘a number of creeks’. In the case of singular object nouns, however, the plural rather than the collective suffix is more frequently attested when referring to the multiplicity of referents. The collective suffix has therefore also a secondary nominalizing function, when deriving such genderless expressions as *bikidoliano*.

---

30 There is handful of nouns derived with the relativizing suffixes *–thi* and *–tho* that refer to individuals from certain age groups, for instance, *bikidoliathi* ‘young man’, and *bikidoliatho* ‘young lady’, both derived from the reflexive verb *bikidonon* ‘grow.REFL’, with the inchoative suffix *–lia* and the gender-marked relativizers. In these cases, the plural form is created by substituting the relativizer with the plural marker itself, resulting in genderless terms, such as *bikidolianon* ‘young people’. This does not, however, apply to cases where the verb combined with a relativizer is already lexicalized, for instance, *semethi* ‘medicine-man’, derived from the stative verb *semen* ‘tasty’, the plural of which is *semethinon*. The plural suffix has therefore also a secondary nominalizing function, when deriving such genderless expressions as *bikidolianon*. 
marker is also found on stative verbs and on the empty verb o/a (§ 3.4.1 and 3.4.2, respectively)

Neither the collective nor the plural marker combines with mass nouns, such as mothoko ‘sand’ in (17). Mass nouns also cannot combine directly with a numeral. They require a mensural term such as karo ‘grain’—a set noun itself.

(17) bian mothoko karo
    biáŋ mot'oko karo
    two sand grain
    ‘two grains of sand’

Mass nouns form a possessive phrase with the mensural term, which functions as the head. The phrase as a whole, headed by a set noun, can combine with numerals, as in (17), and with the collective marker. There are only a few cases of mass nouns in Lokono—the category is therefore tentative. Finally, proper names, as terms referring to unique entities, cannot be combined with numerals, neither with the plural nor the collective suffix (see chapter 6).

3.3.3 Possession paradigms

On the basis of their morphological behavior when possessed, Lokono nouns are divided into two large classes, alienable and inalienable nouns, and a small group of nouns with irregular, or suppletive possessed forms. The possessor is expressed by either a full noun phrase or a free pronoun preceding the possessed noun. Alternatively, a personal prefix from the A-class is attached to the noun. The difference between alienable and inalienable nouns manifests itself in the marking of the possessed noun. When possessed, alienable nouns receive a possessive suffix as in (18).

(18) da–barho–n
    da–baŋ–ŋ
    1SG.A–axe–poss
    ‘my axe’

In (18) the possessor is expressed by a 1st person prefix, and the possessive suffix –n appears on the possessed noun. Other possessive suffixes are also attested. If the possessed noun ends in the vowel /i/, the possessive suffix is usually –a. The noun oni ‘rain, water’, used also as a landscape term ‘river’, when possessed, has therefore the form unia, a partly irregular form beginning with the vowel /ɨ/ (written as <ω>). Other less frequent suffixes are listed in Table 10. Most nouns that combine with the less frequent suffixes are culturally salient artifacts. Notice also two landscape terms karhow ‘savanna’ and konoko ‘forest’, the inclusion of which among terms for culturally salient artifacts is interesting.
Table 10.

LESS FREQUENT POSSESSIVE SUFFIXES.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Possessed form</th>
<th>English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>adaloko</td>
<td>adaloko–ya</td>
<td>type of fish trap</td>
</tr>
<tr>
<td>arhwa</td>
<td>rhwa–the</td>
<td>tiger, general term for members of the cat family</td>
</tr>
<tr>
<td>bian</td>
<td>bian–the</td>
<td>two, second, partner (husband or wife)</td>
</tr>
<tr>
<td>hadisa</td>
<td>adisa–ra</td>
<td>trough for preparing cassava flour</td>
</tr>
<tr>
<td>hime</td>
<td>hime–ya</td>
<td>fish, general term</td>
</tr>
<tr>
<td>đa</td>
<td>ĭda–le</td>
<td>calabash, general term</td>
</tr>
<tr>
<td>karhow</td>
<td>karhow–ya</td>
<td>savanna</td>
</tr>
<tr>
<td>ìke</td>
<td>ìke–re</td>
<td>basket used for carrying items such as cassava</td>
</tr>
<tr>
<td>kódo</td>
<td>kódo–ya</td>
<td>pitcher</td>
</tr>
<tr>
<td>konoko</td>
<td>konoko–ra</td>
<td>forest</td>
</tr>
<tr>
<td>kọsọ</td>
<td>kọsọ–the</td>
<td>needle</td>
</tr>
<tr>
<td>ihi/îya</td>
<td>i‘a–the</td>
<td>arrow cane</td>
</tr>
<tr>
<td>pamo</td>
<td>pamo–ya</td>
<td>salt (possibly a borrowing from Warao)</td>
</tr>
<tr>
<td>tambo</td>
<td>tambo–ya</td>
<td>type of fish trap</td>
</tr>
<tr>
<td>yorhi</td>
<td>yorhi–the</td>
<td>tobacco, cigarette</td>
</tr>
<tr>
<td>wayarhi</td>
<td>wayarhi–ya</td>
<td>basket used by hunters to carry game home</td>
</tr>
</tbody>
</table>

Inalienable nouns, on the other hand, do not take any possessive suffixes. This class includes kinship terms, relational nouns (including body part terms), configurational nouns (i.e. nouns encoding spatial relations), some landscape terms, locative nominalizations, instrument nominalizations, event nominalizations, and a few other terms for culturally salient artifacts. Many of these nouns, most notably relational nouns, configurational nouns, as well as locative and event nominalizations figure prominently in the discussion of landform terms and place names (chapters 4 and 6). An example of an inalienably possessed landscape term is given in (19)—a place name referring to a location where the late medicine-man of Cassipora used to take a bath.

(19) Semethimi Kori
    seme–tʃi–mi kuri
    ‘tasty–SBJ.REL:M–DEAD bathing.place’
    ‘bathing place of the dead medicine-man’

In (19), a landscape term kori ‘bathing place’, denoting an area of a creek purposefully cleared from vegetation in order to wash oneself, appears in a possessive phrase with the possessor expressed by a full noun phrase. The noun phrase semethi consists of the lexicalized combination of a stative verb and the masculine relativizer, conventionally translated as ‘medicine-man’, combined with the suffix –mi meaning ‘deceased’. The noun kori is an inalienable noun therefore there is no possessive suffix attached to it. Inalienably possessed nouns that function solely as landscape terms are listed in Table 11.
TABLE 11.
A SAMPLE OF INALIENABLE LANDSCAPE TERMS.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Meaning and possible origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>babo</td>
<td>an underwater hole between the roots of a tree growing by the bank of a creek, in which certain types of fish are often found (unanalyzable)</td>
</tr>
<tr>
<td>banabo</td>
<td>a temporary outfield camp built in times of intensive agricultural work, or during long hunting trips (derived from bana ‘leaf’ and the instrumental abo)</td>
</tr>
<tr>
<td>bunaha</td>
<td>a permanent path, usually leading to a field or a hunting ground (possibly related to buna ‘bone’ according to Taylor (1961))</td>
</tr>
<tr>
<td>dako</td>
<td>a tributary of a creek, river, or the sea (unanalyzable but possibly related to the active verb dakan ‘urinate’)</td>
</tr>
<tr>
<td>ima</td>
<td>a mouth of a creek or a river ending in another creek, river, swamp, or the sea (unanalyzable); the body part term rheroko ‘lips’ is sometimes used with the same meaning</td>
</tr>
<tr>
<td>kabura</td>
<td>a fishery, an area believed to be particularly rich in a certain species of fish; also the territory (land and water) of a village (unanalyzable)</td>
</tr>
<tr>
<td>kori</td>
<td>a part of a creek cleared from vegetation functioning as a bathing place, in which one washes oneself and one’s clothes (unanalyzable)</td>
</tr>
<tr>
<td>lakabwa</td>
<td>a distributary of a creek or a river, typically one that joins the same water feature later along its course (possible related to the verb lakadun ‘scatter’)</td>
</tr>
<tr>
<td>shikwa</td>
<td>house, used also to express the burrows or animals, the nests of birds, and the homes of spiritual beings (unanalyzable)</td>
</tr>
<tr>
<td>shirima</td>
<td>headland, a piece of land jutting out from the bank of a water feature (possibly related to the body part term shiri ‘nose’)</td>
</tr>
<tr>
<td>shiroko</td>
<td>headwaters (possibly from shi ‘head’ and roko ‘inside body’); also the edible flesh of animals, fruits, vegetables—not necessarily historically related</td>
</tr>
<tr>
<td>sorhi</td>
<td>narrow, impermanent path created by slashing or breaking off twigs, used primarily when following game (unanalyzable)</td>
</tr>
<tr>
<td>waboroko</td>
<td>road, treated sometimes as inalienable and sometimes as alienable by the speakers (clearly complex but unanalyzable)</td>
</tr>
</tbody>
</table>

The list above includes relational nouns that are specific to the subdomain of terms for water features (e.g., dako ‘tributary’) and non-relational inalienable landscape nouns (e.g., kori ‘bathing place). Table 11 does not include relational and configurational nouns that are used both within and outside of the landscape domain (see § 4.5.1 for a detailed discussion).

Within the domain of landscape, in the case of relational nouns, the inalienable paradigm is a reflection of the general architecture of the language—all relational nouns are inalienable. In the case of non-relational inalienable nouns given in Table 11, the inalienable paradigm reflects the Lokono landscape-related cultural practices. The referents of all non-relational inalienable nouns (banabo ‘outfield camp’, sorhi ‘temporary path’, bunaha ‘permanent path’, and kori ‘bathing place’, kabura ‘fishery’) are typically considered the property of individuals or groups, expressed by the obligatory possessor. Permanent paths lead typically to the fields of

31 Notice that I use the English noun fishery not in its primary sense ‘a place where fish are reared for commercial purposes’, but in its secondary sense ‘a fishing ground or an area where fish are caught’.
the family; temporary camps are set up by families near their fields. Bathing places are considered private, and passing through the bathing places of others is avoided. Temporary paths are created merely for the purpose of a single individual that sets out into the forest, and disappear within days. The fact that roads are a recent addition to the local landscape and that they have not been created by the Lokono may explain the exceptional case of waboroko ‘road’. The ownership of landscape features such as roads may be culturally indeterminate. Linguistically, this is reflected in the inconsistent use of the possessive suffix with waboroko, treating it sometimes as alienable and sometimes as inalienable.

In the group of inalienable non-relational nouns, the possessor of which encodes the owner or creator of the landscape feature, I also include the noun kabura ‘fishery’. At first glance, the possessor of kabura encodes the likely catch. It is possible, however, that the possessor refers here in fact to the spiritual manifestation of the relevant species associated with the place. In the Lokono animistic beliefs, each living being has its own spirit, which protects the species and is responsible for its reproductive activity (e.g., Roth 1915; Goeje 1942). The obligatory possessor of the noun kabura may have in fact referred to the spirit of the particular fish associated with the place, rather than the species. This idea is similar to the better-described concept of the master of animals of the Tukano people (Reichel-Dolmatoff 1987). Such masters of animals—the spiritual protectors of a landscape feature—are in charge of certain places making sure that the animals there are under required protection, so that their reproductive activities are not disrupted. Importantly too, kabura has a secondary meaning ‘village territory’. When signifying a territory of a village, the possessor of kabura encodes the inhabitants of the village.

In order to use an inalienable noun without a possessor, an unpossessed suffix –hV has to be attached. The vowel of the suffix undergoes regressive harmonization with the last vowel of the inalienable noun, unless the last vowel is an /a/, in which case the vowel of the unpossessed suffix becomes an /u/, written as <u>. This regressive harmonization rule also applies to other suffixes with unspecified vowels (e.g., the abstract nominalizer –hV, the verbalizers –dV and –tV, the causative suffix –kVtV, and the distal suffix –kVtV discussed below). An example of an inalienable noun used without a possessor is given in (20) from a grammar by Pet (1987), who lived and worked in the village of Cassipora. The noun sorhi denotes an impermanent, impromptu path slashed through the forest when hunting or gathering.

(20) Aba sorhihi darhukufa, dayokhakwanawa.

aba sorhihi darhukufa, dayokhakwanawa.

aba suri–hi da–ti–fa

INDF path.impermanent–UNPOSS 1SG–cut.knife–FUT

da–yok’a–kwana–wa

1SG–shoot.INTRV–INST.NMLZ–REFL

‘I will cut open a path to help me hunt.’ (Pet 1987:321)
preposed object of the predicate expressed by the verb *rhukun* ‘cut with a knife’ prefixed with the 1st person prefix encoding the subject of the clause, and suffixed with the future marker –*fa*. The remaining noun phrase at the end of the clause—an inalienable instrument nominalization—stands in apposition to the object of the verb, and could be translated literally as ‘my hunting implement’.

The clause-final appositional noun phrase in (20) demonstrates one more important nuance of Lokono possessive marking. When the object of a verb is possessed and the possessor is coreferential with the subject of the verb, the reflexive suffix –*wa* may be necessary. The reflexive marker is attached to the possessed noun only if the possessed noun follows the predicate. If it were preposed—a strategy used for topicalization—there would be no reflexive marking. In (21), the possessed noun is *kashipara* ‘machete’, an acculturation term borrowed from Spanish (*cachiporra* ‘machete’).

(21)  *Danuka dakashiparaniawa.*

\[ \begin{align*}
1SG_A & \text{\textit{take}} 1SG_A \text{\textit{–machete–POSS–EP–REFL}} \\
\text{da–nika} & \text{da–kaʃiparã–n–ia–wa} \\
\end{align*} \]

‘I took my cutlass.’

In (21), the alienable noun *kashipara* is possessed, and the 1st person possessor is coreferential with the subject of the clause, therefore the reflexive suffix –*wa* is present. If the noun is inalienable, the reflexive suffix is simply attached to the noun functioning as the object of the verb, as in (20). If the noun is alienable, the reflexive suffix follows the possessive suffix. If the possessive marker happens to be –*n*, an epenthetic syllable needs to be inserted between the possessive and the reflexive suffix, as in (21).

Apart from alienable and inalienable nouns, there is a small group of nouns that have irregular or suppletive forms when possessed listed in Table 12. Such forms are glossed with the index *POSS* to distinguish them from their non-possessed forms (notice that non-possessed is different from unpossessed, the form derived with the unpossessed suffix –*hV*). This category includes a number of terms for culturally salient artifacts, but also a few landscape terms, such as *horhorho* ‘landform’, *kabuya* ‘field’, and *wiwa* ‘star’, if one wants to count celestial bodies into the landscape domain.
TABLE 12.
IRREGULAR AND SUPLETIVE POSSESSED NOUNS.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Possessed</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bahu</td>
<td>shikwa</td>
<td>house, used also to encode the burrows or animals, the nests of birds, and the homes of spiritual beings</td>
</tr>
<tr>
<td>budali</td>
<td>budale</td>
<td>baking plate for baking cassava bread, typically made of metal,</td>
</tr>
<tr>
<td>hala</td>
<td>ulan</td>
<td>traditional bench on which the Lokono people sit, today not commonly used</td>
</tr>
<tr>
<td>hamaka</td>
<td>kora</td>
<td>hammock, the unpossessed form koraha also exists, and has the same meaning as hamaka</td>
</tr>
<tr>
<td>horhorho</td>
<td>horhorha</td>
<td>landform, general term unspecified with respect to shape and size (chapter 4)</td>
</tr>
<tr>
<td>hiki</td>
<td>hime</td>
<td>fire, the unpossessed form hikihi also exists, and has the same meaning as hiki</td>
</tr>
<tr>
<td>kabuya</td>
<td>koban</td>
<td>a swidden, an area cleared from vegetation by slashing and burning vegetation; a field, a plantation</td>
</tr>
<tr>
<td>khali</td>
<td>khale</td>
<td>bitter cassava (Manihot esculenta); also a generic term for cassava bread</td>
</tr>
<tr>
<td>maba</td>
<td>omban</td>
<td>honey</td>
</tr>
<tr>
<td>wiwa</td>
<td>koya</td>
<td>star, used also as a temporal expression meaning ‘year’; koya means also ‘spirit’</td>
</tr>
</tbody>
</table>

A case worth discussing is the non-possessed noun bahu ‘house’, the possessed form of which is shikwa. The possessed form, for instance, dashikwa with the 1st person prefix, means ‘my house’. The unpossessed form of shikwa, however, that is shikwahu with the unpossessed suffix –hV, has the meaning ‘village’ only. The term villages does not have a possessed equivalent.  

Finally, let us notice that certain types of nouns are never possessed. I do not commit myself, however, to the statement that they cannot be possessed at all. Given the right circumstances, all nouns can probably be possessed. Nevertheless, certain landscape terms (e.g., barhâ ‘sea’), address terms from the domain of kinship (e.g., tête ‘mother’), certain types of place names (e.g., Kasuporhi ‘Cassipora’), other terms encoding unique entities (e.g., adali ‘sun’, awadoli ‘wind’), and the configurational nouns ayo ‘up’ and onabo ‘down’, encoding directions on the abstract vertical dimension, have not been attested as the possessed element in possessive phrases. The unpossessable landscape terms are given in Table 13.

It is not unlikely that the lack of a possessed term for village is a reflection of cultural practices. The Lokono society is organized into matrilineal family groups. Spatially the family groups are organized into matrilocal complexes, located at a distance from each other within the village. These distances might have been even larger in the past, since the centralization of the villages is the result of missionary activities. The utility of the possessable noun shikwa ‘home’ is therefore evident. The derived nature of the term for village and its incomplete possessive paradigm may in turn be attributable to the fact that villages—at least in the form known today—are a form of social organization that was not native to Lokono culture.
### TABLE 13. UNPOSSESSABLE LANDSCAPE TERMS.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Meaning and origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>barhá</td>
<td>sea, also any landscape feature that is a large body of water (unanalyzable)</td>
</tr>
<tr>
<td>kairi</td>
<td>negative vegetation space; either a clearing in the forest, or a clump of bush in the savanna</td>
</tr>
<tr>
<td>kiraha</td>
<td>pond, any landscape feature that is a small body of water</td>
</tr>
<tr>
<td>omadáro</td>
<td>rapids (from the verb omadun ‘roar’)</td>
</tr>
<tr>
<td>onébera</td>
<td>a swamp or a waterlogged area, typically not permanent (literally ‘big rain’, in contrast to onikhan ‘creek’ and oni ‘river’)</td>
</tr>
<tr>
<td>oni</td>
<td>a river (lit. ‘rain’) refers to the largest rivers that end in the sea; a term often replaced by proper names of rivers or barhá dako ‘tributary of the sea’</td>
</tr>
<tr>
<td>onikhan</td>
<td>a creek (lit. ‘little rain’), refers to all other watercourses (and their tributaries) that and in the major rivers, irrespective of their size</td>
</tr>
<tr>
<td>shikwahu</td>
<td>village</td>
</tr>
<tr>
<td>thoyoshikwa</td>
<td>city, typically the capital city Paramaribo, but also other big cities (lit. ‘old house’)</td>
</tr>
<tr>
<td>X-wkili</td>
<td>dry patch of plant X (see chapter 5)</td>
</tr>
<tr>
<td>Y-wkaro</td>
<td>wet patch of plant Y (see chapter 5)</td>
</tr>
</tbody>
</table>

In the domain of landscape, the possessive paradigm—that is, the unpossessable character of such nouns—can be attributed to the fact that the landscape features encoded by such nouns are not considered the property of any individuals or groups. They are therefore never possessed.

#### 3.3.4 Definiteness and specificity

Lokono does not have a distinct set of definite articles. Instead, it has a set of three deictically unmarked demonstratives, which can be used both attributively and pronominally. These demonstratives combine with demonstrative suffixes to form fully-fledged demonstratives expressing distance distinctions (§ 3.9.1.1). However, on their own the three deictically unmarked demonstratives listed in Table 14, function as definite articles.

### TABLE 14. DEMONSTRATIVE FORMS AND THE INDEFINITE ARTICLE.

<table>
<thead>
<tr>
<th>Number</th>
<th>Gender</th>
<th>Humanness</th>
<th>Demonstrative</th>
<th>Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>M</td>
<td>li</td>
<td></td>
<td>aba</td>
</tr>
<tr>
<td>SG</td>
<td>F</td>
<td>to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td>HUMAN</td>
<td>na</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When used attributively, the bare deictically unmarked demonstratives indicate that the referent is identifiable in a given context without making use of the distance distinctions encoded in the demonstrative suffixes. This contrasts the three forms with the indefinite aba, which is also be used attributively, and less frequently
pronominally, indicating that the referent is not identifiable in a given context. Importantly, Lokono proper nouns can combine with the deictically unmarked demonstratives—a topic taken up in the discussion of place names (chapter 6).

The demonstratives *li* and *to* are unspecified for number—recall that in example (14), the masculine demonstrative *li* is combined with the collective suffix *–be*. The two demonstratives, however, encode the difference between the masculine and feminine gender. The demonstrative *na* in turn combines with nouns encoding plural human referents only, where ‘human’ means *de facto* ‘Lokono’. None of the demonstratives can combine with the plural suffix *–non*. The attributive use of the demonstratives as markers of definiteness is exemplified in (22), a sentence from a traditional story given in Appendix IV, in which one of the protagonists is turned into a turtle as a form of punishment.

(22)  *Ludukha li hikorhi.*

\[\text{li– dik}^{3a} \quad \text{li} \quad \text{hiku}^{3} \]

*3MA–see DEM:M turtle*

‘He sees the turtle.’

In (22) the speaker uses the deictically unmarked demonstrative *li* to indicate a referent already established in discourse. By choosing the masculine demonstrative instead of the feminine gender expected of non-human referents, he also expresses his sympathy toward the referent that used to be a human being.

The indefinite pronoun and article *aba* is formally identical to the numeral *aba* ‘one’. It exists in the singular only and is gender-neutral. However, the indefinite *aba* can be suffixed with the gender markers, the masculine *–li* and the feminine *–ro*. The result is a pair of indefinite forms *abali* and *abaro*, masculine and feminine, respectively, that can function both as pronouns and articles. The gender-neutral form *aba* is exemplified in (22), the opening sentence of the traditional story in Appendix IV. In (23) the indefinite *aba* is used attributively (i.e. as an article).

(23)  *Bāmun koba tha aba loko hiyaro.*

\[\text{b–ā m}^2\text{ṅ}=\text{koba=th}^b \quad \text{aba} \quad \text{loko} \quad \text{hiyaro} \]

*2SA–have=REM.PST=RPRT INDF Lokono woman*

‘You had once a Lokono woman.’

Example (23) serves to introduce the main protagonist. The indefinite article modifies the phrase *loko hiyaro* ‘Lokono woman’, indicating an as yet unidentifiable referent. The whole expression functions as the object of the verb *āmunin* ‘have’ prefixed with the 2nd person marker encoding the subject, and followed by the distant past enclitic *=koba*, and the hearsay enclitic *=tha*, usually present in traditional stories. The verb *āmunin* ‘have’ derives historically from a spatial expression *omamun*, with the comitative *oma* and the locative *–mun*, a point discussed in the section on complex locative expressions (§ 3.6.3.6). This form of encoding possession is therefore inextricably linked to the expression of spatial relations.
Example (24) comes from the description of the Man and Tree task (Levinson et al. 1992). In (24) in turn, the masculine form abali is used functioning as a stand-alone indefinite pronoun.

(24) **Ken abali dimanâko ma.**

\[
\begin{array}{llllll}
\text{ken} & \text{abali} & \text{dimanâko} & \text{ma} \\
\text{këŋ} & \text{abâ–li} & \text{dîmana–ko} & \text{m–a} \\
\text{and} & \text{INDF–M} & \text{standing–CONT} & \text{EXPL–E.V} \\
\end{array}
\]

‘And a (man) is standing.’

In (24) the main verb is the empty verb o/a, the subject of which is expressed by the indefinite pronoun abali, cross-referenced by the expletive prefix on the empty verb. The empty verb in turn links the subject to the non-verbal adverbial predicate—the adverb dimanâko ‘standing’.

Finally, related to the category of definiteness is the encoding of specificity. In Lokono, there are two forms, the masculine –kili and the feminine –koro, which can be suffixed to a noun in order to mark it as specific—that is, to signal that the speaker is referring to a specific entity (whether definite or not). The feminine specific marker is exemplified in (25), taken from Patte (2011:134).

(25) **Dayo dukhuha to hiyarokoro damatisa.**

\[
\begin{array}{llllll}
\text{day}–\text{yo} & \text{dik’i–ha} & \text{to} & \text{hiyaro–koro} & \text{da–ma–tî–sa} \\
\text{1SG–mother} & \text{see–FUT} & \text{DEM–F} & \text{woman–SPEC–F} & \text{1SG–COM–DES–OBJ–REL} \\
\end{array}
\]

‘My mother will see the woman I want to marry.’ (Patte 2011:134)

In (25), the predicate consists of the verb dukhun ‘see’, suffixed with the future marker –ha (a speaker-dependent variant of –fa), the subject of which is expressed by the possessed noun oyo ‘mother’. The object of the verb is expressed by the noun hiyaro ‘woman’ suffixed with the feminine specificity marker –koro, and modified by the feminine demonstrative. Following the object phrase comes spatial expression combined with a relativizer, functioning as an equivalent of a relative clause. If the specificity marker were absent in (25), the speaker would be talking about a hypothetical future bride, whereas in the current case he already knows who he is going to marry.

As a side note, the specificity suffixes –kili and –koro, contain the masculine and the feminine markers –li and –ro respectively. The remaining element –kî–ko is the specificity element. Underlyingly it is probably –ki, the vowel of which underwent harmonized with the feminine suffix. The element ki functions today both as a nominal enclitic and a verbal suffix, and semantically appears to be related to the specificity markers. However, the form ki developed a number of other uses, the discussion of which is beyond the scope of this thesis. A few examples of –ki=ki can be found in the traditional story in the Appendix IV. It is not unlikely that the forms –ki=ki and the discourse marker kia are also related (see § 3.9.2.3 for a discussion of the discourse marker).
3.3.5 Derived nouns

Morphologically complex nouns can be formed either by the process of derivation, compounding, or the lexicalization of possessive phrases. Table 15 gives an overview of the derivational suffixes used to form nouns.

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>–rîn</td>
<td>agent nominalizer</td>
<td>bûdedârîn</td>
<td>fisherman (bûden ‘fish’)</td>
</tr>
<tr>
<td>–bêro</td>
<td>augmentative nominalizer</td>
<td>firobêro</td>
<td>giant (firon ‘big’)</td>
</tr>
<tr>
<td>–do</td>
<td>derivational feminine</td>
<td>konokhodo</td>
<td>Maroon (konoko ‘forest’)³³</td>
</tr>
<tr>
<td>–di</td>
<td>derivational masculine</td>
<td>afodi</td>
<td>boss (cf. afodo ‘feminine boss’)</td>
</tr>
<tr>
<td>–kwana</td>
<td>instrument nominalizer</td>
<td>dûkhukwana</td>
<td>mirror (dûkhu ‘see’)</td>
</tr>
<tr>
<td>–lí</td>
<td>m. gender nominalizer</td>
<td>bînali</td>
<td>dancer (bîn ‘dance’)</td>
</tr>
<tr>
<td>–n</td>
<td>event nominalizer</td>
<td>bokon</td>
<td>cooking (bokon ‘cook’)</td>
</tr>
<tr>
<td>–nále</td>
<td>locative nominalizer</td>
<td>bîranále</td>
<td>playground (bîran ‘play’)</td>
</tr>
<tr>
<td>–ro</td>
<td>f. gender nominalizer</td>
<td>kasaro</td>
<td>mother (kasan ‘have children’)</td>
</tr>
<tr>
<td>–thî</td>
<td>m. subject relativizer</td>
<td>thoyothî</td>
<td>elderly man (thoyon ‘elderly’)</td>
</tr>
<tr>
<td>–thô</td>
<td>f. subject relativizer</td>
<td>thoyothô</td>
<td>old woman (thoyon ‘old’)</td>
</tr>
<tr>
<td>–sa</td>
<td>object relativizer</td>
<td>marhitîsa</td>
<td>product (marhitîn ‘make’)</td>
</tr>
<tr>
<td>–wklî</td>
<td>m. locative</td>
<td>îtewkîli</td>
<td>palm patch (îte ‘palm species’)</td>
</tr>
<tr>
<td>–wkarô</td>
<td>f. locative</td>
<td>tîrîtiowkaro</td>
<td>reed patch (tîriit ‘reed species’)</td>
</tr>
</tbody>
</table>

A few of these suffixes are relevant to the landscape domain. The event nominalizer and the subject relativizers, discussed together with other nominalizations, play a minor role in the domain of landform terms (chapter 4). The locative nominalizer –nále, the feminine and masculine suffixes –ro and –lí, and the specificity markers are present in many place names (chapter 6). All of these suffixes are discussed together with other nominalizations (§ 3.4.6). The masculine and feminine locative suffixes –wklî and –wkarô are discussed in detail in the chapter about plant-based ecotopes (see chapter 5). The derivational suffixes –do and –di typically derive nouns from noun denoting places, such as konoko ‘forest’ (konokhodo ‘Maroon’), loko ‘inside’ (lokhoodo ‘contents’). They are also found in a few family names (e.g., karhowfodo ‘woman of the relevant family’ and karhowfodi ‘man of the relevant family’), signaling that such family names may be derived from place-denoting nouns (e.g., karhow ‘savanna’). This derivational process is not discussed further in this thesis. However, if these suffixes indeed combine only with place-denoting nouns, they would be the only morphological processes limited to where-nouns, discussed in detail in the following chapters (see also footnote (29)).

The lexicalization of phrases, especially possessive phrases, is another frequently attested source of expressions, particularly in the domain of flora and fauna. Patte

³³ The noun dôrî ‘Maroon’ is a synonym of konokhodo. Of the two, the latter appears to be less politically correct today.
(2003:209–213) lists a number of complex plant and animal names. Most of them have the form of possessive phrases. An overview of the internal structure of such terms, and of the nouns functioning as the head in such phrases, is given in Table 16.

<table>
<thead>
<tr>
<th>Example</th>
<th>Possessor</th>
<th>Possessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>arhwa likin</td>
<td>Tangara sp.</td>
<td>arhwa</td>
</tr>
<tr>
<td>buhuri bada</td>
<td>Machaerium sp.</td>
<td>buhuri</td>
</tr>
<tr>
<td>dorki dike</td>
<td>mushroom sp.</td>
<td>dorki</td>
</tr>
<tr>
<td>hashiro khabo</td>
<td>Selaginella spp.</td>
<td>hashiro</td>
</tr>
<tr>
<td>horkhorho se</td>
<td>Leptotphyllops sp.</td>
<td>horkhorho</td>
</tr>
<tr>
<td>yeshi koshi</td>
<td>Ternstroemia spp.</td>
<td>yeshi</td>
</tr>
<tr>
<td>kama kadi</td>
<td>Bombax spp.</td>
<td>kama</td>
</tr>
<tr>
<td>kâro shi</td>
<td>Cuervea sp.</td>
<td>kâro</td>
</tr>
<tr>
<td>kodibio shi</td>
<td>Mieropolis sp.</td>
<td>kodibio</td>
</tr>
<tr>
<td>korhi koyoko</td>
<td>Anaxagora spp.</td>
<td>korhi</td>
</tr>
<tr>
<td>kwa sepeke</td>
<td>Bellucia sp.</td>
<td>kwa</td>
</tr>
<tr>
<td>warhiti yê</td>
<td>Brassavola sp.</td>
<td>warhiti</td>
</tr>
</tbody>
</table>

The head in such expressions is almost always an inalienable noun, more specifically a relational noun, such as a body part term. Such plant and animal names are lexicalized, therefore the possessor cannot be substituted by a possessive prefix. Semantically, such expressions are metaphoric in nature. The plant name hashiro khabo (lit. ‘otter’s paw’), for instance, is a type of moss, the shape of which resembles the paws of the animal. It is interesting to point out that the grammatical pattern prevailing in the domain of fauna and flora reappears in the domain of landscape. Possessive phrases with relational nouns (including body part terms), and configurational nouns, function as heads in the overwhelming majority of landform terms. The landform terms, however, all share the same possessor—namely, the general term horkhorho ‘landform’. Moreover, landform terms are much less lexicalized than the forms in Table 16. In the expression horkhorho shi ‘landform’s head’ (i.e. ‘the top of a mountain’) the possessor can be replaced by a 3rd person feminine prefix thu– (see chapter 4).

Finally, compounding is uncommon in Lokono. The few cases that we can clearly call compounds have been attested in the domain of landscape, specifically the proper names of large geographic entities, such as the main rivers of the Guianas, large savannas, and large stretches of the forest. When analyzable, such compounds consist of a head denoting the landscape feature and a modifier expressing a location, with respect to which the landscape feature is located, for instance, Kasuporhi Konoko ‘Cassipora Forest’—a forest close to the Cassipora creek. I discuss this compounding template for large geographic entities and contrast it with the other strategies for naming smaller landscape feature when in the chapter on Lokono place names (see chapter 6).
3.3.6 Nominal peripheries

A number of Lokono terms straddle the border between nouns and adpositions. A few cases that can readily be considered adpositions are listed in Table 17. All these forms combine with personal prefixes, following the pattern of inalienable nouns discussed above. Since they have somewhat irregular paradigms, their combinations with personal prefixes are given in Table 17. The list could be expanded, but I focus here only on a few terms that are important to the grammar of space and reappear in the examples used in the thesis. Temporal expressions such as *bena* ‘after’, and *bora* ‘before’, for instance, also fall into this category.

First, personal prefixes combine with the dative marker *mun*, forming both full and reduced forms. Secondly, the prefixes also attach to the instrumental marker *abo*—expressing both instruments and human referents who accompany the agent (see § 3.3.6.2). The comitative *oma* marks co-participants in an activity. The dative and the comitative are important for the discussion of spatial language, and are therefore discussed in more detail below (§§ 3.3.6.1 and 3.3.6.2, respectively). The reciprocal and the collective form (i.e. *together*), *onekwa* and *omakwa*, respectively, are only formed in the plural. None of the five forms can be used as the core arguments of a verb without additional measures being taken—that is, without the presence of additional derivational morphology. Such measures include, for instance, attaching a relativizing suffix, which renders the expression nominal. The expression *loma* ‘with him’, for instance, cannot function as the core argument of a verb, but the expression *lomathi* ‘the man who is with him’ with the relativizing suffix can. These peripheral forms also combine with nouns, forming noun phrases, the structure of which might have been that of a possessive phrase in the past. This explains features such as the presence of the reflexive marker if the modifier is coreferential with the subject. However, today they can no longer be thought of as possessive phrases, and are therefore referred to as adverbial expressions.

<table>
<thead>
<tr>
<th></th>
<th>Dative</th>
<th>Instrumental</th>
<th>Comitative</th>
<th>Reciprocal</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>damun/dan</td>
<td>dabo</td>
<td>dama</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2PL</td>
<td>wamun/wan</td>
<td>wabo</td>
<td>wama</td>
<td>wonékwa</td>
<td>wamakwa</td>
</tr>
<tr>
<td>2SG</td>
<td>humun/bon</td>
<td>babo</td>
<td>homo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3M</td>
<td>humun/hon</td>
<td>habo</td>
<td>homa</td>
<td>honékwa</td>
<td>hamakwa</td>
</tr>
<tr>
<td>3PL</td>
<td>namun/pan</td>
<td>nabo</td>
<td>nama</td>
<td>nonekwa</td>
<td>namakwa</td>
</tr>
</tbody>
</table>

The situation is more complex with configurational nouns, such as *loko* ‘inside’, which, provided the right context, can function as the core argument of the verb. Configurational terms are therefore counted here as nouns, although it is clear that they straddle the border between nouns and adpositions. Importantly too, configurational nouns differ among themselves in the degree to which they still exhibit their nominal status. Some nouns, for instance, *bana* ‘surface’, and *shibo*
‘front’ are still clearly nominal, and are used also as relational nouns (bana ‘leaf’, and shibo ‘face’). Others are further removed from the nominal core, for instance, khona, a term encoding a configuration in which the object to be located adheres to the surface of the location. It is also quite likely that Dutch, which has a class of prepositions, exerts influence on the class of configurational nouns and the other forms that more adpositional in nature. Although diachronically most plausibly nouns in Lokono, many of them are clearly becoming less nominal. Configurational nouns are discussed further in the description of the Basic Locative Construction and figure prominently in the analysis of landform terms (§ 3.6.4 and chapter 4, respectively).

3.3.6.1 Dative

The dative marker mun stands central to the discussion of the what/where distinction, since it is the diachronic source of the where-marker –(mu)n, encoding locations and goals of movement (§ 3.6.3.2). The dative marker forms a phrase with a free noun or is marked with personal prefixes. Apart from the regular prefixed forms, the dative has also developed phonologically reduced forms given in Table 17 above. In contemporary Lokono, the dative marker mun marks the following participants: the receiver in a giving event (26), the addressee in a speech event (27), the benefactor of an event (28), and the causee in the causative constructions with the causative verbs derived with the causative suffix –kVtV (29). Theses functions are illustrated below. Example (26) comes from a description of how the Lokono people receive guests, usually family member, from other villages.

Example (26) Khotaha washika namun.

k'ota–ha wa–fika na–mǐŋ

game–ABST.NMLZ 1PLA–give 3PLA–DAT

‘We give them game.’

In (26) above the dative encodes the receiver in a giving event, expressed by the verb shikin ‘give, put’. The direct object of the verb is encoded by a preposed abstract nominalization. Example (27) below, on the other hand, comes from a speech of the village chief of Cassipora, addressing the inhabitants. In (27) the dative encodes the addressee in a speaking event, expressed by the intransitive verb dian ‘speak, talk’. The preposed expression, literally an expression of the source, is used as an emotional metaphor.

Example (27) Dalwa loko wāya dadiāka humun.

da–lwa loko wa–ya da–d'a–ka hi–mǐŋ

1SGA–heart inside SRC:TL 1SGA–speak–PFV 2PLA–DAT

‘I speak to you from my heart.’

Example (28) below contains in turn the derived verb kashiridan ‘make cassiri’. Cassiri, an alcoholic beverage made from bitter cassava, is typically made by elderly women in the village who specialize in the task.
In (28), the dative marks the benefactor in an event, the person who will benefit from the activity, or for whom the activity is performed. The above three uses of the dative are semantically similar in that they all encode an end-point of the activity (the receiver, the addressee, the benefactor). This end-point semantics is clearly the semantic link with the directionality marker –mun, which encodes the goal of movement (and the location of an activity if the predicate does not imply motion)—a topic taken up in the discussion of the directionality marker (see § 3.6.3.2).34

The last use of the dative marker is to express the causee in a causative event; this use is clearly semantically more removed from the above three. I exemplify it below with a sentence taken form van Baarle et al. (1989:64).

In (29) the dative marker is combined with a complex phrase li korhwa bana kodârhin mun ‘the weaver of korhwa leaves’, denoting a person professionally engaged in the building of thatched roofs made out of the leaves of the Attalea sagotii palm called korhwa (see also the ecotope korhwabanawkili ‘patch of korhwa bana’ in chapter 5). The dative marks the causee in the causative event encoded by the verb marhitikitit ‘have someone make something’ derived from the verb marhitin ‘make’, with the causative suffix –kVf (see § 3.4.3). The rooftop is here expressed by the noun diakhodo, derived from the configurational noun diako ‘top’ with the feminine derivational suffix –do, which typically combines with place-denoting nouns.

34 The terms directionality and configuration are used in keeping with the theory proposed by Lestrange (2010), which builds upon earlier work by Kracht (2002; 2003; 2008). They correspond to the earlier notions of Path and Place (Jackendoff 1990) or Vector and Conformation (Talmy 2000). Configuration markers encode the type of spatial relation between entities (e.g. Lokono loko ‘inside’, a containment configuration). Directionality markers encode the change of configuration over time (e.g. –mun–n location directionality, implying lack of change over time).
3.3.6.2 Comitative

The comitative *oma* encodes participants that are typically equally involved in an activity. As such it contrasts with the instrumental *abo*, which marks participants that have an instrumental role, or who are not as engaged in the activity. Example (30) illustrates the use of the comitative. In (30), the speaker uses the marker to talk about her marriage, a relationship in which two people are ideally engaged in to a similar degree.

(30) *Kia domada loma kobada de.*

\[
\begin{align*}
  &\text{kia} & \text{doma=} & \text{da} & \text{l-oma=} & \text{koba=} & \text{da=} & \text{de} \\
  \text{DSC} & \text{cause=} & \text{DIRCT} & \text{3MA-REM} & \text{PST=} & \text{DIRECT} & \text{1SGb}
\end{align*}
\]

‘Therefore, I was with him back then.’

In (30) above the comitative *oma* is prefixed with the 3rd person masculine prefix, referring to the husband with whom the woman lived. Together with the temporal enclitic = *koba*, the comitative forms a stative predicate, the subject of which is encoded by the 1st person enclitic = *de*. Example (30) can be compared with (31) below which describes the death of the father of another speaker. The father passed away on his way to a celebration that took place in another village, which meant that his travel companions had to go back with his body to their home village.

(31) *Nandashin, lôda, nashifodâka labo kidaban.*

\[
\begin{align*}
  &\text{n-} & \text{nda-} & \text{ʃi-} & \text{ŋ} & \text{l-} & \text{bo} & \text{kidab-} & \text{a} \\
  \text{3PLA-arrive-ANTCP-NMLZ} & \text{3MA-die} & \text{1-abo} & \text{3PLA-turn.INTRV-PFV} & \text{3MA-INST} & \text{again--ADD--AFF}
\end{align*}
\]

‘He died just before arrival; they turned around with him the same way.’

In (31), the first clause is an adverbial clause indicating the time of the event, containing an event nominalization enhanced by a specialized suffix –*shi* meaning ‘just before’ (and glossed here as anticipative). The predicate in the main clause contains the introversive verb *shifodan* ‘turn around’ (related to *shifodun* ‘turn (something) around’), the subject of which is expressed by the 3rd person plural prefix. Instead of the comitative marker, the instrumental marker is used, since the referent of the 3rd person prefix—the deceased father—is no longer equally engaged in the activity of returning home.

Important for the discussion of the Lokono grammar of space is the fact that the comitative *oma* has also spatial uses as a marker of proximity. This is exemplified in (32), which comes from the description of a photograph from the *Picture Series for*...
*Positional Verbs* stimulus, showing a number of cassava tubers lying next to a tree stump (Ameka, Witte, and Wilkins 1999).

(32)  *Kakosako tha to ada toro oma.*

\[
\text{ka–kosa–ko } \text{\textipa{t}}} \text{-a to } \text{ada toro oma}
\]

\text{ATR–near–CONT } 3\text{\textipa{F}}–\text{E.V} \quad \text{DEM:F} \quad \text{tree stump COM}

‘They are close to each other, next to the tree stump.’

Example (32) is a complex empty verb clause, expressing a reciprocal spatial relation (i.e. being next to one another). Without going into much detail at this point, let us notice that the comitative *oma* combines here with the possessive phrase *ada toro* ‘tree stump’, forming an adverb of place meaning ‘close to the tree stump’. Clearly this proximal meaning is an extension of the accompaniment semantics inherent in the comitative. Although examples such as (32) are rare in the corpus, the proximal meaning of the comitative clearly gave rise to four spatial expressions, *âmun, manro, âdi and maria*, discussed at length below (see § 3.6.3.6).
3.4 Verbs

Lokono is a morphologically complex language with a tendency for suffixation. This proclivity is particularly conspicuous in the verbal domain, where derivational and inflectional morphology is rampant. In this section, I focus on the most important features of Lokono verbs, particularly those that are relevant to the ensuing discussion of landscape terms. First, I explain the morphosyntactic split into active and stative verbs based on how the subject of the verb is encoded (§ 3.4.1). The subtypes of active verbs and the semantically empty verb o/a, a special case of an active verb, are discussed separately (§§ 3.4.1.1 and 3.4.2, respectively). Second, I give an account of the derivational processes involved in the creation of both active and stative verbs from other lexical items (§§ 3.4.3 and 3.4.4, respectively), including the privative prefix, which derives negative verbs (§ 3.4.5). Finally, I review a number of nominalizations—structures frequently recurring in Lokono grammar—focusing particularly on the use of gender morphology and relativizers as deverbal derivational suffixes, locative nominalizations, and event nominalizations (§ 3.4.6).

This introduction to Lokono verbal forms provides a necessary background to the analysis of spatial language and landscape terms. The linguistic properties of active verbs, including their internal division into subclasses and means of deriving active verbs, are essential to the encoding of dynamic spatial scenes—that is, motion events (§ 3.10). In addition, two motion verbs kodonon 'enter containment', and fotikidin 'enter non-containment' show an interesting pattern of collocations with the terms for major constituents of the local landscape—that is, forests, savannas, creeks, and rivers—speaking volumes for what concepts these landscape terms encode (§ 3.10.4). The discussion of stative verbs, on the other hand, is crucial to the understanding of the structure of the Basic Locative Construction, which has the form of a stative clause (§ 3.6). It also helps to understand the functional limitations of the Basic Locative Construction vis-à-vis the Locative Equation, the surface form of which can be misleadingly similar to that of the default spatial construction (§ 3.8). The empty verb, in turn, plays a key role in the Posture Construction; another functionally determined alternative to the Basic Locative Construction employed when the posture of the referent to be located is informationally salient (§ 3.7). Event nominalizations and verbs marked with relativizers are also utilized in the Posture Construction and the Locative Equation, and play a minor role in the domain of landform terms and place names (§§ 4.5.1.3 and 6.2, respectively). In the latter domain, locative nominalizations and derivational gender morphology described here as well play a more significant role.

3.4.1 Active and stative verbs

The class of active verbs is defined by their compatibility with personal prefixes to encode the subject—the same prefixes that encode the possessor of nouns (i.e. the A-class). Active verbs include all transitive verbs, including verbs such as îhin
'know', which encodes a state, as well as intransitive verbs denoting activities, and the empty verb o/a. All motion verbs are active verbs (§ 3.10.2). An example with the transitive verb of caused motion rurukhun 'move (something)' is given in (33)—an order to move something out of the way.

(33) Bururukha no!
bi-rik'a=no
2SG_A-move=3f_B
'Move it (out of the way)!'

Sentence (33), an example of the use of the imperative mood, distinguished from the indicative mood only by intonation, contains the transitive active verb rurukhun 'move (something)', prefixed with a 2nd person prefix expressing the subject (A-class), and followed by the 3rd person feminine enclitic expressing the object of the verb (B-class).

The subject of intransitive verbs encoding actions is encoded with the same prefixes that combine with transitive verbs. This is exemplified in (34), another example of the imperative mood. The class of intransitive active verbs includes a number of motion verbs, such as the deictically unmarked verb ôsun 'go'. When unaccompanied by other deictic morphology, for instance, the deictic markers of associated motion, the verb receives a translocative interpretation (see § 3.10.3).

(34) Bôsa!
bo:o:sa
2SG_A-go
'Go (away)!'

In (34) the intransitive active verb ôsun 'go' is prefixed with the 2nd person marker of the A-class encoding the subject; the same form that was employed to encode the subject of the transitive active verb in (33).

As opposed to intransitive active verbs, stative verbs are intransitive verbs that lexicalize states. The concepts encoded by stative verbs are expressed in English by the grammatical class of adjectives. Lokono has no such word class. Nevertheless stative verbs are glossed with English adjectives, for instance, heben 'ripe' in (35). It is worth reiterating that states expressed by verbs such as âmunin 'have', îthin 'know' are encoded by transitive verbs, and therefore are part of the active verb class. Lokono also lacks posture verbs such as the English sit encoding the state of being in a certain position. The closest translational equivalents are expressed either by active verbs such as balutun 'sit down' or by the complex posture adverbs in a construction with the empty verb o/a (see § 3.7). Importantly, the Basic Locative Construction has the form of a stative predicate (§ 3.6).

Instead of personal prefixes found with intransitive active verbs, stative verbs combine with personal enclitics to encode the subject—the same enclitics that are used with transitive verbs to encode the object (i.e. the B-class). This is exemplified in (35), which comes from an instructional narrative about planting a calabash tree, and manufacturing drinking vessels from its fruit. In this bi-clausal example, the first clause is an adverbial temporal clause containing the stative verbs heben 'ripe'.
Since it is preceding the main clause, it iconically encodes an anterior event. The second clause is the main clause containing the transitive verb ‘ôyin ‘harvest’ (used with fruits that grow above the ground, as opposed to yâdan used with tubers).

(35)  *Hebenda no, wôyada no.*

hebê–n=da=no  w–o:ya=da=no  
ripe–NMLZ=DIRCT=3FB  1PLA–harvest=DIRCT=3FB  
‘When (the fruit) has ripened, we harvest it.’

In (35) the subject of the stative verb *heben* ‘ripe’ is expressed by the 3rd person feminine enclitic *–no*, the same form that expresses the object of the transitive verb in the main clause (i.e. *B*-class).

Summing up, all transitive verbs, irrespective of their meaning, fall into the active verb category. It is worth pointing out that the class of intransitive verbs is split into two groups, those that combine with personal prefixes (intransitive verbs encoding activities) and those that combine with personal enclitics (intransitive verbs encoding states) to express the subject. Such active/stative split of intransitive verbs is typical of Arawakan languages (e.g., Aikhenvald 1999). In Lokono the split of intransitive verbs is motivated by the meaning of the verb only, as opposed to languages in which it can be motivated by, for instance, tense and aspect.

In (35) above there is no TAM marker on the stative nor on the active verb, but it should be stressed that the language has a tendency for morphological complexity. Both active and stative verbs can combine with an array of TAM suffixes, a selection of which is listed in Table 18.

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Meaning</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>–bia</td>
<td>transformative</td>
<td>has also a purposive meaning (§ 3.10.1)</td>
</tr>
<tr>
<td>–bo</td>
<td>progressive</td>
<td>encodes activity that is in progress</td>
</tr>
<tr>
<td>–fa</td>
<td>future</td>
<td>has a speaker-dependent variant <em>–ha</em> 36</td>
</tr>
<tr>
<td>–ka</td>
<td>perfective</td>
<td>stative verbs and active verbs: subclass II and IV (§ 3.4.1.1)</td>
</tr>
<tr>
<td>–koma</td>
<td>abilitative</td>
<td>stative verbs and active verbs: subclass II and IV (§ 3.4.1.1)</td>
</tr>
<tr>
<td>–li</td>
<td>volitiation</td>
<td>encodes volition, but not obligation</td>
</tr>
<tr>
<td>–ma</td>
<td>abilitative</td>
<td>used with active verbs from subclass I and II only (§ 3.4.1.1)</td>
</tr>
<tr>
<td>–na</td>
<td>expected</td>
<td>used when the event is expected from the general context</td>
</tr>
<tr>
<td>–ra</td>
<td>unexpected</td>
<td>used when the event is unexpected from the general context</td>
</tr>
<tr>
<td>–ti</td>
<td>desiderative</td>
<td>the only suffix that can precede the event nominalizer</td>
</tr>
<tr>
<td>–ya</td>
<td>veritative</td>
<td>pertaining to the possibility of something being true</td>
</tr>
</tbody>
</table>

36 The future suffix has two forms –*fa* and –*ha*, the distribution of which might have depended on the dialect before. Similar variation exists in lexical items such as *yaho/yafə* ‘cotton’.
The discussion of the combinatorial possibilities of the TAM suffixes is beyond the scope of this thesis (see also Patte 1998; 2003; 2008; Pet 1987; Baarle et al. 1989). A few important cases are discussed in the following section, in which the subclasses of active verbs are examined.

3.4.1.1 Subclasses of active verbs

Active verbs are split into four subclasses, based on the paradigm of the root-final vowel. The subclasses differ in their general semantic profile, which is relevant to the discussion of motion verbs (§ 10). The subclasses are easily recognizable, for instance, by their nominalized form with the event nominalizer, which is used as the citation form of the verb. The four types of nominalizations are illustrated in Table 19, with four different verbs formed from the same root, namely marhikhotV−, which itself is a combination of marhikho ‘knowledge’ and the verbalizer –tV (see § 3.4.3).

<table>
<thead>
<tr>
<th>Root</th>
<th>Vowel</th>
<th>NML</th>
<th>Nominalization</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>marhikho</td>
<td>-V</td>
<td>-n</td>
<td>marhikhoton</td>
</tr>
<tr>
<td>II</td>
<td>marhikota</td>
<td>-a</td>
<td>-n</td>
<td>marhikhotan</td>
</tr>
<tr>
<td>III</td>
<td>marhikho</td>
<td>-o</td>
<td>-non</td>
<td>marhikhotonon</td>
</tr>
<tr>
<td>IV</td>
<td>marhikhotwa</td>
<td>-wa</td>
<td>-n</td>
<td>marhikhotwan</td>
</tr>
</tbody>
</table>

The underlying vowels of the verbs from subclass I are not predictable. The vowel can be either /i/, /ε/, /o/, or /ɨ/, depending on the root. It cannot, however, be the vowel /a/, which is the underlying vowel of verb roots in subclass II only. The underlying vowel of verbs in subclass III is always /o/; such verbs have a special form of the event nominalizer—namely, –non, which distinguishes them from verbs from subclass I that end in /o/, for instance, morodon ‘fly’. The root-final vowel of nominalized verbs from subclass IV is the diphthong /wa/, which is most likely a combination of the /o/ of subclass III and the /a/ of subclass II—a fact reflected in the meaning of such verbs (see below). These vowels are found in the nominalized form, but they change if a TAM suffix is added, according to the specific paradigm of the subclass. These secondary alternations are, however, not relevant to the discussion of landscape terms, and therefore the root-final vowels are not glossed in this thesis. In the case of the empty verb o/a, the changes, however, result in a suppletive form of the verb, and are therefore exemplified below (§ 3.4.2).

The four subclasses of verbs also differ in how the basic inflected form of the verb is formed. Verbs from subclasses I and III can stand unmarked, without any TAM marker. Verbs from subclass I end in this case in the vowel /a/. A few examples appeared above in (33), (34), and (35). In example (36) the transitive verb farun ‘kill’ is used, the object of which is expressed by a nominalization firobêro, a synonym for kama ‘tapir’, which succinctly describes the appearance of the largest mammal of South America.
(36)  **Dafara firobôro.**

daf–fara  firo–be:ro
1SG–kill  big–AUG.NMLZ
‘I killed a tapir (lit. big giant).’

In (36), there is no TAM suffix, and the verb ends in the vowel /a/. Such unmarked forms are temporally unspecified, and it is the context that provides the clues necessary to the interpretation of their temporal reference. Most transitive verbs fall into this category, which also includes certain intransitive verbs—notably, ôsun ‘go’ and andun ‘arrive’.

The unmarked form of the verbs of subclass III, on the other hand, ends in the diphthong /wa/, which is not accidentally identical to the reflexive suffix –wa used on nouns (§ 3.3.3). Verbs from this class often have a reflexive meaning, but importantly the subclass includes also a number of motion verbs, the internal structure of which is not necessarily transparent. Whether semantically transparent or not, all such verbs are glossed as reflexive, which should be understood in terms of their membership in subclass III. The reflexive motion verb *rurukhonon* ‘move oneself’, related to the verb *rurukhun* ‘move (something)’ from example (33) above, is exemplified in (37). The utterance comes from an elicitation session based on the Event Triads stimulus, showing a ball moving away from a wooden block (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(37)  **Thururukhwa thôya.**

t³–rîrik³wa  t³–o:ya
3FA–move.REFL 3FA–SRC.ATL
‘(A ball) moved itself away from (a wooden block).’

The subject of the verb is again encoded by an A-class prefix, and the verb is glossed as reflexive to distinguish it from the related transitive verb *rurukhun* ‘move (something)’. The locative expression that follows expresses the source of movement with the atelic marker ôya ‘away from’, and the 3rd person prefix attached to it referring to the wooden block from which the ball is rolling away. The atelic source marker is used when the movement away from something is not completed or if there is no goal toward which the movement is oriented (see § 3.6.3.3).

Verbs from subclasses II and IV, on the other hand, cannot stand unmarked. They require a TAM suffix. Verbs of subclass II are either idiosyncratic cases such as *dian* ‘talk’, which has no equivalents in other subclasses, or introersive verbs. Introversive verbs are understood here as verbs expressing events in which the patient is backgrounded, and the activity itself is foregrounded. The introersive verb *faran* ‘fight’ in (38), for instance, is related to the verb *farun* ‘kill’ from (36), which is reflected in the glosses.

(38)  **Dafarâka péro oma.**

daf–fara–ka  pe:ro  oma
1SG–kill.INTRV–PFV  dog  COM
‘I fought with a dog.’
In this case the perfective suffix –ka is employed to encode an activity that is viewed as completed. The perfective form can be seen as an equivalent of the a-form of subclass I and the wa-form of subclass III, when these refer to past events; verbs from these two subclasses cannot combine with the perfective suffix. The backgrounded patient is expressed as an oblique argument with the comitative oma, but such introversive verbs do not necessarily have to be intransitive.

Verbs from subclass IV, in turn, are rare, and often have idiosyncratic meanings. They cannot stand unmarked, and instead combine with the perfective suffix –ka, analogically to the verbs from subclass II. If structurally transparent, as the verb marikhhotwan ‘study’ in Table 19, they combine the features of both reflexive and introversive verbs. The patient is backgrounded, the activity is foregrounded and performed on the subject. This semantic profile is reflected also in their underlying diphthong /wa/, which is a coalescence of the reflexive /o/ typical of subclass III and the introversive /a/ typical of subclass II.

Verbs from subclasses I and III cannot be combined directly with the perfective –ka. They can, however, combine with the perfective suffix, if additional morphology is added first, for instance, the desiderative suffix –ti, the comparative suffix –sabo, and the specificity suffix –ki. Examples of such predicates are numerous in the folktale given in the online Appendix IV. There are thus similarities between subclasses I and III, on the one hand, and subclasses II and IV, on the other. Interestingly, each subgroup also has their own abilitative suffix. The verbs from subclass I and III use the abilitative –ma, the verbs from subclass II and IV the suffix –koma (see Table 18 above). As evident from Table 19, the examples, and the discussion above, the subclasses defined by their vowel paradigms have different semantic profiles. However, it has to be stressed that there are many idiosyncratic meanings in the lexicon of Lokono verbs. The description presented here should therefore be understood as a generalization, to which exceptions certainly can be found, the discussion of which is beyond the scope of this thesis.

3.4.2 Empty verb o/a

The empty verb is the central element of the predicate in the Posture Construction (§ 3.7). Its function is mainly to relate the subject to a non-verbal predicate, but it is different from the copula found in equative clauses (§ 3.5.3). As opposed to the copula, which is a bare demonstrative form, the empty verb has a number of features typical of active verbs. It has the form of a single vowel o/a, a vowel alternation typical of active verbs. It combines with personal prefixes to encode the subject and the TAM markers. Yet, it is semantically vague; its most semantically fleshed-out realization is as a verb of speech used to report direct speech. In Arawakan literature such verbs are often called empty verbs (e.g., Danielsen 2014), though in other languages they may be often labeled relators or linkers.

There are a number of expressions that trigger the use of the empty verb, most importantly adverbal expressions (§ 3.5.4). As is the case with other active verbs, the root-final vowel changes, depending on the suffix that follows—these changes are not glossed in this thesis. However, since the empty verb is only one vowel long, the verb in fact has two suppletive forms dependent on the following marking, as in demonstrated in (39) and (40) below. Utterance (39) comes from a recording of a
man weaving a kēke, the most common type of basket, worn on the back and carried by a strap wrapped around one’s forehead.

(39)  
To di bohada inatunhada no.  
to d'i  b-o-ha=da  ina-ti-n-ha=da=no  
DEM:F SMLR 2SGA=E.V+FUT=DIRCT bottom-VIZ~NMLZ=FUT=DIRCT=3FB  
‘Like this you will do, starting it.’

In (39) it is the similarity marker di following the feminine demonstrative to, forming an adverbial phrase of manner that triggers the use of the empty verb. The empty verb is always the carrier of the personal prefixes; here the 2nd person prefix is used to encode the subject. Typically the empty verb is also the carrier of the TAM morphology. When the future suffix –ha is attached to it, the verb assumes the form o. The semantic content of the predicate is expressed by the nominalized derived verb inatun ‘begin’ (lit. ‘make a bottom’) in the example above. Occasionally, however, as in (39), the TAM markers also appear on the nominalized form (§ 3.4.6.4). More importantly, in other contexts, for instance, when there is no suffix following the empty verb, its form changes to a. This is illustrated in (40), which is part of the same recording as (39), and structurally very similar to (39) as well.

(40)  
To di ba shikinda no.  
to d'i  b-a  jikî-n=da=no  
DEM:F SMLR 2SGA=E.V put~NMLZ=DIRCT=3FB  
‘You put it like this.’

The choice between o and a depends on what suffixes are attached to it (if any). I hypothesize that the vowel changes of the empty verb, and of other active verbs in fact, triggered by the TAM suffixes are diachronically attributable to the realis/irrealis distinction. It is, however, difficult at the moment to find a pattern behind the paradigm, which for other active verbs is much more complex than the o/a substitution. This simplified picture does not give justice to the empty verb morphology. In fact there are at least two empty verbs, the one described here which patterns like a subclass I active verb, and another empty verb patterning like a subclass II verb. Worth noticing too, is the fact that there is small set of adverbs such as din/dian expressing similarity in (40), which also have two different root-final vowel forms, and are probably verbal in origin (cf. dian ‘talk’).

3.4.3 Derived active verbs

Active verbs can be derived from both nouns and verbs. In Table 20, the most important means of deriving active verbs are given. These derivational processes come to the forefront in the discussion of motion verbs (§ 3.10).
Lokono active verbs can be derived from nouns and stative verbs with two verbalizing suffixes –dV and –tV, of which only the former one is productive. Both transitive and intransitive verbs can be derived with the two suffixes. The latter suffix is found in already existing verbs only, such as shikwatun ‘make a house’, derived from the noun shikwa ‘house’.POSS—a suppletive possessed form of bahu ‘house’. Example (41) comes from a personal narrative of an elderly Lokono woman, and illustrates the matrilocality of the Lokono people, which is not as strictly practiced as before.

(41) Derethi shikwata kobada wo dayo kosan.
    de–retʃiʃ ikwa–ta=koba=da=wo da–yo kosã–ŋ
1SG,–husband house.POSS–VBZ=REM.PST=DIRCT=1PL=1SG,–mother near–LOC.WHR
‘My husband made us a house back then, close to my mother.’

The subject of the transitive verb shikwatun ‘make a house’ is expressed by a full noun phrase derethi ‘my husband’, while the object is expressed by the 1st person plural enclitic. A spatial expression encoding the location of the event comes at the end of the clause. The vowel of the verbalizing suffixes –tV and –dV undergoes the same regressive harmonization as the nominal unpossessed suffix –hV described earlier (§ 3.3.3). Importantly, the final vowel of the verbalizing suffix becomes the root-final vowel of the verb, and therefore undergoes the changes typical of other root-final vowels, and can be used to identify the subclass of the verb. Another example of a derivation with the suffix –tV is the verb inatun ‘begin’ (lit. ‘make a bottom’), given in (39) above.

Active verbs can also be derived from stative verbs with the –dV/tV suffixes, as in (42) with the reflexive verb shokeotonon ‘become smaller’, derived from the stative verb shokon ‘small’. The addition of the verbalizing suffix to the stative verb introduces an extra participant—the agent, turning it from a stative verb encoding a state into an active verb encoding an activity performed to reach that state. Example (42) comes form a discussion of the present territory of the Cassipora village, which according to the village chief speaking in (42) has shrunk due to encroachment of the government, logging and mining companies, and other parties. Notice that the postposed subject-denoting noun kabura (lit. ‘fishery’), has a second meaning ‘territory’, which speaks volumes for the importance of water features to the Lokono people.
In (42) the postposed subject is cross-referenced on the verb with the 3rd person prefix. The derived reflexive verb *shokotonon* ‘shrink’ (subclass III) is related to the transitive verb *shokoton* ‘make smaller’ (subclass I). Notice that the root-final vowel of the derived verb is the vowel of the verbalizing suffix. The verb is additionally followed by the comparative suffix and the venitive enclitic, which here signal that the process has progressed and is coming to completion (see §3.10.5 on the uses of the venitive). The verbalizers derive a few motion verbs, such as the reflexive *aymuntonon* ‘move oneself up’, derived from the stative verb *ayomun* ‘high’.

The suffix –*bo* applies to active verbs, the meaning of which it intensifies. Take as an example the verb *dûdun* ‘jump’, and the verb *dûdâbon* derived from it. Example (43) comes from a narrative about a trip to the forest, during which the speaker was observing a monkey jumping among tree branches, referred to here as masculine to show affectivity.

In (43) both the main clause and the dependent clause have the structure of an empty verb construction (see §3.5.4). Zooming in on the (second) dependent clause, I should point out that the speaker decided not to use the simplex motion verb *dûdan* ‘jump’, which encodes a singular punctual event, nor the simple introverse verb *dûdan*. Instead he opted for a derived verb *dûdâbon* ‘jump intensively’, which is an intransitive verb encoding an event of higher intensity. The vowel preceding the intensifier is always a long /aː/, which is also typical of introverse verbs. Most motion verbs can be intensified, enriching the Lokono vocabulary of motion verbs.

A somewhat different result is achieved by reduplicating the root of an active verb. Reduplication of active verbs results in an iterative meaning. In (44), a sentence describing my frequent visits to Suriname, the reduplicated verb *moromorodon* ‘fly repeatedly’, derived form the root of the verb *morodon* ‘fly’ appears. For comparison, an intensified verb *morodâbon* means ‘fly back and forth (like crazy)’.

---

37 The suffix is also attested with terms that are not necessarily verbal, for instance, *môthia* ‘morning’ (cf. *môthi* ‘tomorrow’), which when intensified *môthiâbon* means ‘early in the morning’. However, the vowel alternations between *môthi* and *môthia*, may suggest that these are in fact originally verbs.
(44)  _Lumoromoroda Sorhinamanro._

\[
\begin{array}{ll}
\text{li–moro–moro–da} & \text{surinamā–n–ro} \\
3_M{\text{A–ITR–fly–VBZ}} & \text{Suriname–LOC.WHR–ATL} \\
\end{array}
\]

‘He keeps flying to Suriname.’

Notice that reduplication is accompanied by the attachment of the verbalizer \(-dV\). This is more conspicuous when we look at verbs such as ôsun ‘go’, which do not contain the verbalizing \(-dV\) suffix in the first place, as opposed to morodon—a synchronically unanalyzable, but clearly derived verb. The reduplicated form of ôsun ‘go’ is ôsosâdun ‘go repeatedly’. The goal of motion in (44) is marked by an atelic marker \(-ro\), normally signaling that the goal is not reached (see §3.6.3.3). Here, it is rather echoing the meaning of the verb, which necessitates that the referent does not remain at the location. Reduplication is a productive process, further complementing the motion lexicon.

Finally, Lokono also has a causative suffix \(-kVtV\), which can be attached to active verbs to derive causative verbs, thereby introducing yet another participant: the causer. The vowels of the suffix \(-kVtV\) undergo the same regressive harmonization described earlier. Example (45) comes from a description of a stimulus from the Put project, showing a woman throwing stones on the ground (Bowerman et al. 2004).

(45)  _Thutikidikita shiba horhorho bana._

\[
\begin{array}{ll}
\text{tī–tīkidī–kita jība} & \text{hoɾoɾo bana} \\
3_F{\text{A–fall–CAUS}} & \text{stone landform surface} \\
\end{array}
\]

‘She let the stone fall to the ground.’

The verb used in (45) is tikkiditian ‘let fall, cause to fall’, a form derived form the verb tikkidin ‘fall’. The subject is expressed by the prefix attached to the verb. If there is a causee and there is a need to express it linguistically, it is typically marked by the dative marker \(-mun\) (see §3.3.6.1 above). The causative derivation is a productive derivational process, which yields a number of verbs, including verbs of caused motion.

3.4.4 Derived stative verbs

Stative verbs can be derived from nouns with the attributive or the privative prefix, resulting in verbs meaning, respectively, possessing or lacking the entity encoded by the noun. The attributive prefix \(ka–\) and the privative prefix \(ma–\) are possibly related to the expletive prefixes \(k–\) and \(m–\) discussed earlier (§3.2.2). Interestingly, Lokono also has an active verb âmun ‘have’, which is in fact a phonologically reduced locative expression onamun, consisting of the comitative _oma_ and the directionality marker _mun_. The different historical origin of the two ways of expressing possession, with the prefixes or with the verb, explains the observed semantic difference. The attributive and privative prefixes are typically used to express permanent possession or part-whole relations, while the latter is used for temporary
possessions, and could be translated as ‘have on oneself’ or ‘in one’s proximity’—a meaning clearly related to the comitative semantics. The affixal strategy is exemplified in (46), taken from the instructional narrative about planting the calabash tree. Here the complex verb katokorhon ‘have flowers’ derived form the noun tokorho ‘flower’ is employed.

(46) Katokorhokada no.
    ka–tokoro–ka=da=no
    ATR–flower–PFV=DIRCT=3F
    ‘It has flowers.’

If the noun is an inalienable noun such as tokorho ‘flower’, there is no possessive marking following it. If it is an alienable noun, the appropriate possessive suffix is required. If it is a noun with an irregular or suppletive possessed form, it is this form that has to be used. This is exemplified with the privative prefix in example (47), taken from a traditional story about a man who lived on his own without a wife, and therefore had no cassava.

(47) Makhaleka tha sabo dei.
    ma–khale–ka=t=a=sabo=dei
    PRV–bitter.cassava.POSS–PFV=RPRT=CMPR=3M
    ‘He had no bitter cassava anymore, it is said.’

In (47), the noun khali ‘bitter cassava’ appears in its possessed form khale, prefixed with the privative ma–, forming a stative verb makhalen ‘lack bitter cassava’. The perfective suffix –ka is used, followed by an evidential enclitic =tha, signaling that this information is based on hearsay (see also example (23) above). The enclitic =sabo encodes the comparative degree, while the subject is expressed by the 3rd person masculine enclitic.

3.4.5 Negation with the privative prefix ma–

Negation in Lokono can be expressed either by the negative particles kho and khoro, or by the privative prefix; the differences between the two types of negation are discussed in other publications (Patte 2014). I focus here therefore on the privative prefix only, which is of importance to the discussion of motion verbs (§ 10).

The privative prefix can be attached to both active and stative verbs to form a verb with a negative meaning. Such negative stative verbs do not differ in any other

38 This division of labor between the two strategies of encoding possession is today blurred by language contact with Dutch and Sranantongo, which conflate the two types of meanings in one verbal form. In Lokono the verb âmunin ‘have’ therefore is spreading to domains previously dominated by the prefixes. In the text given in the online Appendix IV, for instance, family relations are expressed with the verb âmunin, while typically here Lokono used to employ the prefixes.
respect from typical stative verbs, and the negative stative verbs derived from nouns discussed above. The subject is expressed by personal enclitics, and the usual TAM markers appear, as in (48) below with the verb *masemen* ‘not tasty,’ derived from the verb *semen* ‘tasty’.

(48)  *Masemekada no.*

\[
\begin{align*}
\text{ma–seme–ka=da=no} \\
\text{PRV–tasty–PFV=DIRCT=3Fb}
\end{align*}
\]

‘It is not tasty.’

In the case of active verbs, on the other hand, the privative prefix fills in the prefix slot, which is normally occupied by the personal prefix encoding the subject. In such cases a special construction is required with the empty verb *o/a* to form a complete predicate. The empty verb bears the person-marking and the TAM suffixes, while the content verb combines with the privative prefix and an event nominalizer forming a privative nominalization. Example (49) comes from a conversation about hunting and speaks volumes for how the distance covered by hunters diminishes with age, a factor that may explain the proximity of the ecotopic patches mapped with the elderly speakers in Cassipora (see chapter 5).

(49)  *Mósun da tādi sabo.*

\[
\begin{align*}
\text{m–o:si–n} & \quad \text{d–a} & \quad \text{taː–di=sa}bo \\
\text{PRV–go–NMLZ} & \quad \text{1SGA=E.V} & \quad \text{far–VIA=CMPR}
\end{align*}
\]

‘I don’t go far anymore.’

In (49), the content verb *ősūn* ‘go’ is prefixed with the privative prefix, while the empty verb is prefixed with the 1st person prefix encoding the subject. Empty verb clauses such as the one given in (49) are discussed in more detail below (§ 3.5.4).

3.4.6 Nominalizations

Lokono makes extensive use of specialized nominalizers, listed together with gender markers and relativizers in Table 21. Nominalizations can function as typical nominal expressions, although some of them have specialized uses, for instance, as complements of complement-taking predicates and as adverbial dependent clauses. The gender markers discussed earlier and relativizers, in turn, when attached to verbs form modifiers analogical to adjectives or relative clauses (§ 3.5.5). These forms too can function as stand-alone nominals.
For the ensuing discussion of spatial language and landscape terms, a selection of the suffixes listed in Table 21 requires further elaboration. The event nominalizer –n and its reflexive equivalent –non, which are particularly frequent in Lokono discourse, play an important role in a number of following sections. The relativizers are central to the discussion of the Locative Equation (§ 3.8). Both event nominalizations and verbs marked with relativizers are also employed as a minor strategy for coining landform terms (chapter 4). Event nominalizations and, more importantly, the locative nominalizer –nale, and the gender markers, whether encoding specificity or not, feature prominently in the discussion of place names (chapter 6).

### 3.4.6.1 Gender morphology on verbs

The four gender markers, listed in Table 22, were discussed earlier in the sections on gender and definiteness in the nominal domain (§§ 3.3.1 and 3.3.4, respectively). However, they can also be attached to verbs, forming nominalizations differing in gender and specificity. Such forms are frequently attested in the corpus of place names (chapter 6).

### TABLE 21. A SELECTION OF NOMINALIZERS.

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>–bêro</td>
<td>augmentative nominalizer</td>
<td>firobêro ‘big one’</td>
</tr>
<tr>
<td>–hV</td>
<td>abstract nominalizer</td>
<td>adayaha ‘government’ (adayan ‘mature’)</td>
</tr>
<tr>
<td>–kili</td>
<td>masculine specificity marker</td>
<td>Urhikili ‘the brown one’ (man’s nickname)</td>
</tr>
<tr>
<td>–koro</td>
<td>feminine specificity marker</td>
<td>Urhikoro ‘the brown one’ (creek’s name)</td>
</tr>
<tr>
<td>–kwana</td>
<td>instrument nominalizer</td>
<td>bokâkawna ‘cooking instrument’ (cooker)</td>
</tr>
<tr>
<td>–li</td>
<td>masculine gender marker</td>
<td>Binali ‘dancing man’ (person’s name)</td>
</tr>
<tr>
<td>–n</td>
<td>event nominalizer</td>
<td>bokan ‘cooking (a meal)’ (introversive)</td>
</tr>
<tr>
<td>–nale</td>
<td>locative nominalizer</td>
<td>bokânale ‘cooking place’ (kitchen)</td>
</tr>
<tr>
<td>–non</td>
<td>reflexive event nominalizer</td>
<td>bokonon ‘cooking itself’ (i.e. boiling)</td>
</tr>
<tr>
<td>–rhin</td>
<td>agent nominalizer</td>
<td>bokârhin ‘cook’ (person)</td>
</tr>
<tr>
<td>–ro</td>
<td>feminine gender marker</td>
<td>Binaro ‘dancing woman’ (person name)</td>
</tr>
<tr>
<td>–sa</td>
<td>object relativizer</td>
<td>bokosa ‘what one cooked’</td>
</tr>
<tr>
<td>–thi</td>
<td>masculine subject relativizer</td>
<td>bokathi ‘man that cooks’</td>
</tr>
<tr>
<td>–tho</td>
<td>feminine subject relativizer</td>
<td>bokatho ‘woman that cooks’</td>
</tr>
</tbody>
</table>

### TABLE 22. GENDER MARKERS.

<table>
<thead>
<tr>
<th>Specificity</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unspecific</td>
<td>–li</td>
<td>–ro</td>
</tr>
<tr>
<td>Specific</td>
<td>–kili</td>
<td>–koro</td>
</tr>
</tbody>
</table>

The gender marker –li and –ro attach to nouns forming nominalizations encoding the subject of the verb. Such nominalizations can be derived from both active verbs
(encoding activities) and stative verbs (encoding states). They differ from agent 
nominalizations in -rhin, which do not apply to stative verbs, and derive terms for 
people professionally engaged in an activity. A nominalization derived with the 
masculine gender marker –li is given in (50), from the story in the online Appendix 
IV, in which it is used as a description of one of the main protagonists who is a hard-
working young man.

(50)  \( Li \, \dot{o}sos\dot{a}dali \, m\dot{o}thi\dot{a}boro \, mali \, \dot{o}sun \,[\ldots] \)
\[ \text{DEM} \, \text{TR} \rightarrow \text{go} \rightarrow \text{VBZ} \rightarrow \, \text{M} \, \text{mor} \rightarrow \text{INTS} \rightarrow \text{REST2} \, \text{EXPL} \rightarrow \text{E.V} \rightarrow \text{VOL} \, \text{go} \rightarrow \text{NMLZ} \]
‘The one who goes repeatedly must go only early in the morning \[…\]’

Fragment (50) has the structure of an empty verb clause, triggered by the restrictive 
suffix –ro, which derives adverbs with the meaning ‘only’ (§ 3.5.4). Since the 
subject is preposed to the predicate, the expletive prefix m– appears on the empty 
verb, which in turn is followed by the content verb \( \dot{o}sun \) ‘go’. The preposed subject 
is expressed by a masculine nominalization of the verb \( \dot{o}sos\dot{a}dun \) ‘go repeatedly’, 
meaning ‘man who goes repeatedly’, modified by the masculine demonstrative li.

Example (51), in turn, demonstrates the use of the feminine gender marker –ro 
with a stative verb. The utterance comes form an elicitation of motion verbs, with 
the help of the Event Triads stimulus, and describes a scene in which a ball enters an 
enclosure (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(51)  \( Thokodwa \, \text{tora} \, \text{balalaro} \, \text{tholokonro}. \)
\[ 3F_{A} \rightarrow \text{enter.containment.REFL} \, \text{DEM:F} \rightarrow \text{MED} \, \text{round} \rightarrow F \, \text{F}_{A} \rightarrow \text{inside.LOC.WHR} \rightarrow \text{ATL} \]
‘That ball (lit. the round feminine) entered toward the inside of it.’

The subject of the reflexive verb \( \text{kodonon} \) ‘enter containment’ is expressed in (51) 
by the nominalized stative verb \( \text{balala} \) ‘round’. Since the referent is an inanimate 
entity, the feminine gender marker is used, and the modifying demonstrative agrees 
in gender. The subject is also cross-referenced on the verb with the 3rd 
person feminine prefix. The locative expression that follows at the end encodes the goal 
of motion, which is here treated as atelic to express ‘toward’. Just like the gender 
markers, the specificity suffixes can also be attached to verbs, deriving 
nominalizations. In the case of the specificity markers, however, the nominalization 
has a specific referent. The nominalization \( \text{balalakoro} \) ‘specific round object’, for 
instance, would be used if the speaker has a specific round object in mind, and wants 
to foreground this information.

3.4.6.2 Relativizers

Relativizers typically attach to verbs, both active and stative, forming equivalents of 
relative clauses, although they have also been found on nouns (§ 3.5.5). The 
combination of a verb and a relativizer can also function as nominals on their own, 
and as such play an important role in the Locative Equation (§ 3.8). The choice of
the relativizer depends on two other factors. First, the question is whether it is the subject or the object of the verb marked with a relativizer that is coreferential with the noun relativized noun. In the latter case the object relativizer is used—namely, the suffix –*sa*, which has a speaker-dependent variant –*sha*. Naturally, object relativizers are only found on transitive verbs. Nominals derived with the object relativizer are inalienably possessed—the subject has to be expressed either by a prefix on the verb or by a full noun phrase preceding the nominal. Example (52) is one of the typical opening sentences of a Lokono folktale, speaking volumes for the oral aspect of Lokono culture.

(52)  
\[
\text{Dathimi âkasha to, ani, udiahu.}
\]
\[
da–tʃi–mi a:ka–ʃa to to i–d’a–hi
\]
\[
1SG–father–DEAD tell–OBJ.REL DEM.F DEM.F EXPL–talk–ABST.NMLZ
\]
‘The story is what my late father, um, told me.’

Example (52) is a verbless equative clause with the (first) feminine demonstrative functioning as a copula. The argument is expressed by the noun phrase to *udiahu*, with the second feminine demonstrative to modifying the abstract nominalization *udiahu*, containing the obsolete expletive prefix V–. The predicate is expressed in turn by the verb ãkan ‘tell’ nominalized with the object relativizer; the form âkasha means therefore literally ‘what is said’. The possessor of the nominalization is expressed by the full noun phrase dathimi—an inalienable noun ithi ‘father’ combined with the 1st person possessor and a suffix meaning ‘deceased’.

If, on the other hand, it is the subject of the verb marked with a relativizer that is coreferential with the relativized noun, the gender of the relativized noun determines whether the masculine relativizer –*thi* or the feminine relativizer –*tho* is used. Subject relativizers are found on both active verbs (transitive and intransitive), and stative verbs. The relativizers have also been attested on nouns denoting materials, for instance shiba ‘stone’, ada ‘wood’, and event nominalizations. All such forms can also function as stand-alone nominals, and are in fact frequently used as such. Typical examples are the terms for members of particular age groups, such as *thoyothith* ‘elderly man’ and *thoyothoth* ‘elderly woman’, both derived from the stative verb *thoyon* ‘elderly’. As pointed out by Pet (1987:44), the forms marked by the relativizers form a continuum from relative clauses to lexicalized items that are no longer transparent to the speakers. The last group is best exemplified by the Lokono kinship terminology, with many of the male kinship terms ending in the relativizing suffix –*thi*, and many of the female counterparts ending in –*tho*, for instance, *rethi* ‘husband’ and *rethoth* ‘wife’, respectively. The following example, in turn, contains two *ad hoc* forms that are not lexicalized. Utterance (53) is another opening sentence of a traditional story, directly addressing the listeners and the viewers of the recording that was being made.

(53)  
\[
\text{Kanabakanabákwanthi of dukhuthi, dei to Purci.}
\]
\[
kanaba–kanaba–kwa–n–tʃi of dik’h–tʃi dei to Perci
\]
\[
ITR–hear,INTRV–CONT–NMLZ–SBJ.REL:M or see–SBJ.REL:M 1SG DEM:F Purci
\]
‘Listeners and viewers, I am Purci.’
In (53) the masculine relativizer is first attached to the reduplicated introersive verb *kanaban*, meaning 'listen', suffixed with the adverbializer –*kwa*, and an event nominalizer –*n*. Subsequently, it appears on the verb *dukhun* 'see'. Both nominalizations function as terms of address to the prospective audience of the recordings, and are followed by an equative clause, in which the speaker introduces himself. Finally, it is important to point out that the nominalizations derived with the relativizers readily attach TAM markers. This is typically the case when they are used as an argument in an equative clause or as relative clauses (relevant examples are given in §§ 3.5.3 and 3.5.5, respectively).

3.4.6.3 Locative nominalization

The locative nominalizer –*nale* is found in a number of place names (chapter 6). Its history and morphological make-up are somewhat complex. The second syllable of the morpheme is likely linked to other forms such as –*kole*, a suffix expressing habitual aspect. More interestingly, the shortest attested *nale*-term is *munale* meaning ‘a person’s designated place in the house’ (i.e. for hanging a hammock). This form is most likely a combination of the directionality marker *mun* expressing static location, which today is reduced to –*n*, and the habitual –*le*. The vowel /a/ in the suffix –*nale* might have been part of the expression from the start, functioning as an epenthetic vowel, since the combination /nl/ is not allowed in Lokono. It appears thus that the suffix –*nale* is originally a combination of the directionality marker, encoding location, and the habitual suffix, which supports its semantic content today.

Furthermore, the dictionary of the Western dialect spoken in Guyana contains a number of forms in –*nale* (Bennett 1989). The author of the dictionary treats –*nale* as a noun meaning ‘place’, and often writes such expressions as two words, for instance, *biran nale* ‘play ground’, including the event nominalization *biran* ‘play, playing’. Such terms are always a combination of a nominal (a nominalization or a simplex noun) and the term *nale*. This again corroborates the analysis that the suffix –*nale* originates in the locative element *mun*, which indeed is nominal in origin and is related to the free dative form *mun* (§ 3.6.3.2). A number of *nale*-forms extracted from Bennet’s (1989) dictionary are given in Table 23.
The data suggest that the form *nale* was in fact a combination of the location marker *mun* with the habitual marker –le, which, combined with a nominal, most likely formed a locative expression enhanced with habitual semantics. The nominals used in such forms indicated a location where an activity (encoded by nominalizations) usually took place, or where an entity (encoded by other types of nominals, e.g., *tika* ‘shit’) was usually found. I believe that, since nominalizations were the most frequent input for this derivation, the suffix was reanalyzed as a verbal suffix, and the geminate nasal (e.g., *birannale* ‘playground’) was reduced to a single instantiation of an /n/.

The reanalysis hypothesis is further corroborated by the aberrant behavior of *nale*-derivations with the directionality marker. Examples from van Baarle et al. (1989) suggest that such derivations can be unmarked when encoding the location of an event, similarly to configurational nouns (e.g., *loko* ‘inside’).

(54)  *To hadali lamadan, dadukha Loes thoyokharan nale.*

   to adali lama–da–ŋ da–dik’a lus t’o–yok’arâ–n nale

DEM:F sun bent–VBZ–NMLZ 1SGA–see Loes 3F,–sell.INTRV–NMLZ place

‘This afternoon, I saw Loes at the market.’ (Baarle et al. 1989:53)

In (54) the form *thoyokharan nale* functions as an adverbial expression of location, yet there is no location marker –n. This could be a feature of the idiolect of van Baarle’s informant. However, if the reanalysis hypothesis is true, such behavior is not surprising. If indeed from a diachronic perspective the suffix *nale* contains the directionality marker *mun*, there may have been no reason to express it again. In my corpus, however, *nale*-derivations appear with the directionality marker *mun* when used to encode location of an event. This may be a signal that such forms have
become lexicalized, and that the fossilized marker is no longer transparent to the speakers.

Finally, it is important to notice that such nominalizations are inalienably possessed, and that they typically combine with active verbs of subclass II—that is, the verbs, the citation form of which ends in –an (see Table 23). The choice of the verb is probably not accidental since subclass II verbs are typically introversive, foregrounding the activity, and it is the activity that lies at the core of the semantics of the nale-derivations. The inalienable possession paradigm, in turn, is demonstrated in (55), which comes from the description of the ecotope mokorowkaro ‘a patch of mokoro reed (Ischnosiphon sp.)’ (see chapter 5).

(55) Nayokhanale kida to yahadi.
na–yokʰa–nale kida to ya–ha–d̩i
3PL,SHOOT,INTRV–LOC,NMLZ too DEM,F LOC,DEM–PRX–VIA
‘This area around here is (the ancestors’) hunting ground as well.’

In (55), the locative nominalization yokhanale ‘hunting ground’ appears with the 3rd person plural prefix, but there is no possessive marker, a pattern symptomatic of inalienable nouns. Interestingly, the 3rd person prefix used here can only refer to Lokono people, and it is regularly found in certain types of place names, where it encodes the ancestors of the Lokono people living in the villages today—a topic taken up in the chapter on place names (chapter 6). The 3rd person feminine prefix thu– would be used instead to express other ethnic groups.

3.4.6.4 Event nominalization

The event nominalizer –n, and its reflexive equivalent –non, are particularly frequent in Lokono grammar. The nominalized form of the verb is first of all used as the citation form of the verb, both by the speakers and by linguists (e.g., ôsun ‘go’). Such normalized forms are also used as a complementation strategy, and in a number of dependent adverbial clauses, including locative adverbial clauses (see § 3.11.2).39 Event nominalizations also play a role in the Posture Construction (§ 3.7), and in the domain of landforms and place names (chapter 4 and 6, respectively).

If not used as a citation form, event nominalizations always require a possessor; they can therefore be grouped together with other inalienable nouns. Interestingly, however, they retain many of their verbal features. They can, for instance, be suffixed with most of the TAM markers typically found on verbs, such as the ablative suffix –ma in (56) below. I exemplify the use of event nominalizations in a clause with the verb ithin ‘know’, which shows how they function with complement-taking predicates. Example (56) is a fragment from the traditional story in the online Appendix IV. The verb ithin ‘know’ is a transitive verb, and requires

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39 However, not all adverbial clauses require the nominalized form with the event nominalizer, an important exception being the conditional clause, which employs the conditional suffix –harukha.
an object, normally encoded by a noun or personal enclitic. In (56), however, it is an event nominalization that takes the place of the object.

(56)  *Deitha budukhunima dei khona kiba.*

d–eitʰa bi–dikʰi–n–i–ma dei kʰona kiba
1SG–know 2SG–see–NMLZ–EP–ABIL.1 1SG about too
‘I know that you can take care of me too.’

In (56) the object of the verb *ithin* ‘know’ is the complex nominalization *budukhunima*, literally meaning ‘your ability in care-taking’. The possessor of the nominalization is expressed by the 2nd person prefix attached to it, and encodes the agent in the activity. The abilitative suffix appears following an epenthetic vowel. It is worth mentioning that the event nominalizer used as a complementation strategy or as a marker of dependent clauses is sometimes omitted. Instead, paratactic clauses are used without any marking of dependency, which may be symptomatic of language attrition.
3.5 Clause structure

In Lokono there are four types of main clauses. Active clauses are used to express events lexicalized by active verbs, while stative clauses are required with stative verbs (§§ 3.5.1 and 3.5.2, respectively). The third option is a verbless equative clause that has both identificational and descriptive uses (§ 3.5.3). Finally, there is a special case of active clauses—namely, clauses in which the main verb is the empty verb o/a (§ 3.5.4). Dependent clauses, on the other hand, can be grouped into relative clauses (§ 3.5.5), identifiable by the presence of one of the three relativizers, adverbial clauses typically containing an event nominalization (§ 3.5.6), and complements clauses. The last type is not discussed in this thesis, as its role in the grammar of space is negligible.

All six types play a role in spatial language, and the encoding of landscape terms. Active clauses are central to the expression of motion events (§ 10). Stative clauses provide the morphosyntactic frame for the Basic Locative Construction (§ 3.6). The analysis of equative clauses is necessary to the description of the Locative Equtation and its functional limits (§ 3.8). The Posture Construction, in turn, used when posture is informationally salient, has the form of an empty verb clause (§ 3.7). In addition, relative clauses play a minor role in the encoding of landforms (§ 4.5.1.3), while adverbial clauses provide the important context for adverbial clauses of location (§ 3.11.2).

3.5.1 Active clauses

Since this thesis focuses on landscape and active verbs play only a marginal role in this domain, active clauses are not focal to the analysis presented in the following chapters. The structure of the active clause is, however, important to the proper understanding of motion verbs and many examples given in the thesis. Active verbs denote actions, or are transitive verbs, and are characterized by the possibility of expressing the subject with a personal prefix (A-class), and the object with a personal enclitic (B-class), if transitive. Instead of the prefixes a full noun phrase or a free pronoun can be used to encode both the subject and the object of the verb. The prefixes are preferred in unmarked discourse. Full noun phrases tend to introduce new subjects and objects, and free pronouns are used mostly for topicalization.

The prefixes do not normally have a cross-referencing function (within a clause), but if the subject is postposed to the predicate, the prefix is still obligatory on the verb. In other words, some expression of the subject always has to precede the predicate. This is exemplified in (57), where an intransitive active verb is used.

(57) Lôda koba, li wathimi koba.
    l–oːda=koba li wa–tʃi–mi=koba
    3M–die=REM.PST DEM:M 1PL–father–DEAD=REM.PST
    ‘He died long time ago, our late father.’

In (57) the active intransitive verb ôdon ‘die’ is prefixed with the 3rd person masculine prefix, coreferential with the postposed noun phrase li wathimi koba. The postposed subject phrase contains the suffix –mi, meaning deceased, and a distant
past enclitic =koba functioning here as a nominal temporal marker. The prefixes are, however, ungrammatical if a full noun phrase or a personal pronoun precedes the predicate. This is evidenced by example (58), which comes from a story in the online Appendix IV about two men competing for the hand of a young woman. The mother of the young woman wants to inspect their fields, but she will only do so once they have finished clearing the field.

(58)  [...] dei kho dukhuhathe alika ha nekhebon!
     dei=klo dikʰi=te alika h–a nekʰeb–ŋ
     1SG=NEG see–FUT=VEN how 2PLA–E.V work–NLMZ

‘[...] I will not come look how you work! (i.e. before you finish)’

In the main clause of (58) the 1st person pronoun dei encodes the subject, and therefore there is no personal prefix on the verb itself. The predicate consists of the verb dukhu ‘see’, suffixed with the future marker, and a marker of associated motion =the, signaling motion toward the deictic center—in this case the place where the two interlocutors will be working (§ 3.10.5).

The same restriction applies to the use of personal enclitics, as shown in (59), which comes from the same story, and is uttered by one of the prospective sons-in-law, addressing the mother.

(59)  Danshika bî, damukuthuwa kiba.
     d–nʃi–ka bi: da–mkʰi–wa=kiba
     1SGA–love–PFV 2SG 1SGA-mother.in-law–REFL=too

‘I love you too, my mother-in-law.’

In (59), the 2nd person pronoun bî encodes the object of the transitive verb anshin ‘love’. The pronoun bî is used instead of the personal enclitic =bo for emphatic effect—the speaker stresses that he loves his (prospective) mother-in-law as well, irrespective of the circumstances. The object is also expressed by a postposed kinship term, specifying whom the speaker addresses.

It is important to notice, however, that if the object of the verb is preposed to the predicate, it is not cross-referenced by a personal enclitic following the verb. Example (60) comes from the same story as (59); here the prospective son-in-law addresses the daughter of the elderly woman.

(60)  Bi danshika.
     bi: d–nʃi–ka
     2SG 1SGA–love–PFV

‘You, I love.’

In (60) a preposed free pronoun encodes the object—the topicalization and fronting of the object, compared to similar expressions of love in the story, such as (59) above, render this utterance particularly powerful. It is the love toward the daughter that really is at stake. Morphosyntactically, it is noteworthy that there is no personal enclitic following the verb. In conclusion, the subject and object of active verbs can only be expressed once within the clause. The former always has to be expressed
preceding the verb, but the latter can appear either before or after the predicate. Additional postposed appositional subject and object expressions are used to provide more information about the subject.

3.5.2 Stative clauses

Stative clauses are central to the topic of this thesis, since the Lokono Basic Locative Construction has the morphosyntactic structure of a stative clause (§ 3.6). The predicate in stative clauses is a stative predicate, usually a stative verb—that is, an intransitive verb encoding a state. In previous sections, I have identified stative verbs as those that can encode the subject with personal enclitics (B-class), as opposed to active intransitive verbs that combine with personal prefixes (A-class).

Stative verbs, apart from a few idiosyncratic cases, require a TAM suffix to form a complete predicate. The perfective marker is quite frequent in such clauses, and semantically most unmarked, but a number of other TAM suffixes can be used. These are the same suffixes that are used with active verbs (see Table 18 above). As opposed to active verbs, however, stative verbs can also combine with the collective suffix –be, typically found on nouns. This is exemplified in (61), in which an elderly woman is speaking about her children.

(61) Thoyobekate ye.
   t'oyo–be–ka=t'ye
   elderly–COL–PFV=VEN=3PLB
   ‘They have all become almost elderly.’

In (61), the stative verb thoyon ‘elderly’ is first combined with the collective –be, before the perfective suffix is attached. Subsequently comes the venitive enclitic, which signals that the process is almost achieved. This morphological nuance is interesting in the light of the fact that stative clauses may be formed not only by stative verbs, but also by nouns, provided that the right pragmatic context is given. Example (62) comes form a landform elicitation session, during which the participants described photos of landforms. The participant hesitated how to call a mountain in Lokono, and concluded with the following utterance.

(62) Bergikoma no.
   bergi–koma=no
   mountain–ABIL.2=3FB
   ‘It can be a mountain.’

In (62), the landform term bergi ‘mountain’—an ad hoc borrowing from Sranantongo (ultimately from Dutch berg ‘mountain’)—is followed by the ablitative suffix –koma, forming a complex predicate. The predicate has the structure of a stative clause, since the subject is expressed by the 3rd person enclitic. A similar example comes from a narrative about baking khali ‘cassava bread’ from the flour extracted from the tuber (also called khali).
Example (63) is interesting not only because the stative predicate is formed by a noun, followed by the transformative suffix –bia, and the perfective suffix –ka, but also because it shows that the active/stative alignment applies across clauses. The subject of the first stative predicate is coreferential with the object of the transitive verb in the second clause. The speaker expresses it therefore only once at the end of the whole sequence.

The subject of a stative clause need not be expressed by a personal enclitic—a full noun phrase or a pronoun can be used instead, under the pragmatic circumstances described above for active verbs. According to Pet (1987), if such a noun phrase were preposed with respect to the stative predicate, an enclitic coreferential with the noun phrase would still be used following the predicate. This is no longer the case in Lokono, as demonstrated by example (64), taken from the story in the online Appendix IV, in which it is part of the explanation of the origin of the ebb and flow of the sea.

In (64), following the sentence connective kia lokoda, with the discourse marker kia, comes the noun phrase to kashirida, the subject of a complex stative predicate. The predicate consists of the noun oniabo ‘water’, followed by the transformative suffix –bia, the perfective suffix –ka, and the venitive enclitic =the, which signals that the state has been almost accomplished. The subject is preposed, but there is no coreferential enclitic following the verb. The same rule applies to free pronouns, as shown in a structurally similar example (65), which comes from a life story of a speaker who plays the role of a medicine-man during performances of a Lokono dance group.

In (65) following the dependent locative clause comes the main stative clause, the subject of which is expressed by a 1st person singular free pronoun dei, preposed with respect to the predicate. The predicate, in turn, consists of the stative verb semen ‘tasty’ marked by the masculine relativizer –thi, meaning literally ‘the tasty masculine one’, but conventionally translated as ‘medicine-man’, followed by the transformative suffix –bia, and the perfective suffix –ka. Needless to say, if a full
noun phrase encoding the subject follows the predicate, the enclitics are not used either, unless, of course, the noun phrase is in apposition to the personal enclitic, and serves merely to provide more information about the subject. In conclusion, the subject in stative clauses can only be expressed once within the clause, whether following the predicate in an unmarked clause or preceding the predicate for topicalization.

3.5.3 Equative clauses

The Basic Locative Construction is a stative clause, typically employing the perfective marker –ka, though other markers are also attested in less typical scenarios (§ 3.6). However, if a spatial relation is viewed as permanent, the Basic Locative Construction is not felicitous, and a Locative Equation is employed instead (§ 3.8). This construction has the form of an equative clause. In equative clauses two nominal expressions, one of which functions as the predicate and the other as its argument, are juxtaposed. The predicative element expressing new information can precede its argument as in (66).

(66) Fodi toho.

    fudi            to–ho
    monkey  DEM,F–PRX

    ‘This here is a tufted capuchin (Cebus apella).’

In (66) the proximal feminine demonstrative toho is the argument, about which identity as a fodi (Cebus apella) is predicated. The two nominals agree in gender, in this case the feminine gender, and number in the case of human-denoting nouns that encode number. A deictically unmarked demonstrative (masculine li or feminine to) can be optionally added between the predicate and the argument to function as a copula in such clauses. The copula typically agrees in gender with the argument, but today it seems that the feminine copula to is increasingly being used in all cases, irrespective of gender agreement.

Alternatively, the order of the predicate and the argument can be reversed. The two structures, one in which the predicate precedes, and one in which it follows the argument, are contrasted below in an extract from Patte (2003). The difference is pragmatic in nature—if the argument precedes the predicate it is topicalized.

(67) [A₁]: Hama biri?

    hama  b–i:ri
    what  2SGA–name

    ‘What’s your name?’

[B₁]: Lucy Smith dîri.

    lusi smiθ d–i:ri
    Lucy Smith 1SGA–name

    ‘Lucy Smith (is my name).’
[A₂]: Hama bi ɪrī?

hama  bi:  i:ri

what  2SG  name

‘What’s your name?’ (emphasis by the present author)

[B₂]: Dîri, Deborah.

d–i:ri   debora

1SG–name Deborah

‘My name is Deborah.’ (Patte 2003:102)

The first question [A₁] is a pragmatically unmarked way of asking about a person’s identity—it follows the first structure with the predicate preceding its argument. The reply [B₁] is a neutral way of answering the question, echoing the pattern with the predicate preceding the argument. The second question [A₂] differs in the use of the free pronoun instead of the personal prefix, which signals a shift of attention to the other speech participant. The following answer [B₂] makes use of the inverted structure with the argument preceding the predicate, topicalizing the argument.

Irrespective of the order of the predicate and the argument, such equative structures are employed to identify the referent, or have a more descriptive function, particularly if both the predicate and the argument are morphologically complex. Utterance (68) is another example of such a clause, illustrating the use of nominalizations formed with the relativizing suffixes to attribute a feature to the entity expressed by the argument.

(68) Ken kia hiyaro, bikidoliatho tora.

kɛŋ kia   hiyaro   bikido–lia–tɔ   to–ra

‘And this girl, she was a young (lady).’

In (68) the complex nominalization bikidoliatho ‘young lady’ functions as the predicate. It consists of the reflexive verb bikidonon ‘raise oneself, grow’, suffixed with an inchoative suffix –lia, and the feminine relativizer –tho. The literal meaning of this nominal expression, denoting a member of a certain age group, is ‘feminine one that begins to grow’. The expression is, however, customarily translated as ‘young lady’. The argument of the predicate is the feminine medial demonstrative tora, which has here an anaphoric function. The preposed noun phrase kia hiyaro, with the discourse marker kia, identifying a participant mentioned earlier in discourse, is coreferential with the argument of the predicate.

Verbs marked with relativizers such as bikidoliatho can attach TAM markers to express meanings that are quite removed from the prototypical idea of identifying an entity. Examples (69), for instance, is a typical Lokono greeting—a rhetorical question, about what one is doing at the moment. It is framed as an equative clause; notice that yes/no questions differ from assertions only in the intonation pattern.
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(69)  *Balabalākwantiboda hi?*

\[
\text{bala-balaː–kwā–n–tʃi–bo=da hiː} \\
\text{COL–sitting.on–CONT–NMLZ–SBJ,REL–M–PRG=DIRCT 2PL}
\]

‘How do you do? (lit. Are you still sitting now?)’

In (69) the predicate is formed from a posture root *bala* ‘sitting on one’s bottom’, reduplicated to express plurality of the subject—a reduplication pattern restricted to certain roots (§ 3.7.1). It is followed by a series of suffixes, including an adverbializer, an event nominalizer, a masculine subject relativizer, and a progressive suffix. Notice that if the argument is a 1st or 2nd person, the free pronouns *dei/wei* (1st singular/1st plural) or *bî/hî* (2nd singular/2nd plural) are used. This is a crucial piece of evidence demonstrating that equative constructions are juxtapositions of two nominals, and not stative verb constructions, which require personal enclitics. Confusion could arise since the same TAM markers (e.g., the progressive –bo) appear also in stative clauses. It is worth recalling that such predicates are also formed by nouns, as discussed earlier on examples (62), (63), (64), and (65). If a full noun phrase, or a free pronoun is used, the surface form of an equative clause may therefore be identical to that of a stative clause. A stative clause, however, has a different underlying morphosyntactic frame—the subject can be expressed by a personal enclitic. In equative clauses, if a person form expresses the subject, it must be a free pronoun, not an enclitic. It is worth stressing that in equative clauses the TAM suffixes function merely as nominal temporal markers, as opposed to the stative clauses in which they are an integral part of the predicate.

The difference between stative and equative clauses does not restrict itself to their morphosyntactic structure. The meaning of stative clauses is always tinged with the semantics of the particular TAM marker used. Most frequently, it is the perfective suffix –*ka*, which is semantically quite vague compared to other TAM suffixes listed in Table 18 above. But even the meaning of the perfective –*ka* colors the clause with its semantics. This becomes particularly conspicuous when a stative and an equative clause, both built around the same stative verb, are contrasted. This is exemplified in (70) and (71), in which both predicates contain the stative verb *semen* ‘tasty’.

(70)  *Semeka to kadukura.*

\[
\text{seme–ka to kadikira} \\
\text{tasty–PFV DEM:F soup}
\]

‘The soup is tasty.’ (i.e. ‘The soup turned out tasty’)

In (70) the noun *kadukura*, denoting a thick soup made out of the cooked juices squeezed out of the tubers of bitter cassava, is the subject of the stative predicate formed by the verb *semen* ‘good’ and the perfective suffix. The use of the perfective marker implies a resultative reading: the soup turned out tasty. The implication is different if an equative clause is used instead.
In (71) the noun kadukura functions as the argument of the nominal predicate semetho ‘one that is tasty’. The soup is here identified as or equated with a tasty meal in general. This difference in meaning between stative and equative clauses underlies the functional division between the (stative) Basic Locative Construction, which is used to encode spatial scenes that are seen as resultative states, and the Locative Equation, which encodes spatial scenes seen as permanent configurations (§ 3.8).

3.5.4 Empty verb clauses

In empty verb clauses the empty verb o/a functions as the main verb—the element to which personal prefixes encoding the subject are attached, and to which the TAM markers are suffixed. Personal prefixes define empty verb clauses as a subtype of active clauses. Empty verb clauses appear throughout the thesis, but their structure is of particular importance to the discussion of the Posture Construction—a functionally determined alternative to the Basic Locative Construction (§ 3.7). In the following I therefore discuss their general properties, and subsequently turn to the features of the continuative adverbializer –ko, which derives posture adverbs found in the Posture Construction.

There are a number of linguistic contexts that trigger empty verb clauses, the most important of which are listed in Table 24. The triggers can be grouped into two main types: negation of active verbs with the privative prefix and adverbial expressions. In the former case, the empty verb construction is used simply because the prefix slot on the active verb is already occupied by the privative prefix (§ 3.4.5 above). The empty verb is therefore necessary as a placeholder for personal prefixes expressing the subject. All other triggers of empty verb clauses fall into the category of adverbial expressions. These include simplex adverbs such as mera ‘quickly’, but also a number of complex forms derived with specific adverbializer, such as the continuative adverbializer –ko. Furthermore, adverbial phrases, for instance, those formed with the marker of similarity din/dian also require an empty verb. The same applies to complement clauses introduced by the relative adverb halika ‘how’. Even reported utterances bear traces of adverbial expressions in Lokono, since they can be substituted with both halika ‘how’ and hama ‘what’, and always require a speech-act tag, which has the form of a minimal empty verb clause.
TABLE 24.
LINGUISTIC CONTEXTS TRIGGERING EMPTY VERB CLAUSES.

<table>
<thead>
<tr>
<th>Type of expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>• privative prefix <em>ma</em> used with active verbs, blocking the subject prefix slot</td>
</tr>
<tr>
<td>• reported utterances</td>
</tr>
<tr>
<td>• complement clauses with the relative adverb <em>halika</em> ‘how’</td>
</tr>
<tr>
<td>• manner adverbs <em>mera</em> ‘quickly’ and <em>basada</em> ‘slowly’</td>
</tr>
<tr>
<td>• adverbial phrases with the similarity marker <em>din/dian</em> ‘like’</td>
</tr>
<tr>
<td>• adverbs derived with the augmentative adverbializer <em>−ke</em> adding the meaning ‘very’</td>
</tr>
<tr>
<td>• adverbs derived with the continuative adverbializer <em>−ko</em> adding the meaning ‘still’</td>
</tr>
<tr>
<td>• adverbs derived with the restrictive adverbializer <em>−ro</em> ‘only’</td>
</tr>
<tr>
<td>• adverbs derived with the restrictive adverbializer <em>−re</em> ‘exactly’</td>
</tr>
<tr>
<td>• adverbs derived with the intensifying adverbializer <em>–bo</em></td>
</tr>
<tr>
<td>• adverbs derived with the approximative adverbializer <em>–thin–thian</em> ‘kind of’</td>
</tr>
</tbody>
</table>

As already mentioned, in empty verb clauses person-marking normally appears on the empty verb. An important exception to this rule is the situation, in which the subject is expressed by a pronoun or a full noun phrase preceding the predicate, as in (72), another fragment from the story in the online Appendix IV. In such cases, the expletive prefix is employed.

(72) _Than bena thada, tora dukhako ma kida._

\[
\begin{array}{llllll}
\text{3F.A: E.V–NMLZ} & \text{after}=\text{RPRT}=\text{DIRCT} & \text{DEM: F–MED} & \text{sec.Intrv–Cont} & \text{Expl–E.V again} \\
\text{t–ã–m} & \text{bena=t} ã=da & \text{to–ra} & \text{dik} ã=–ko & \text{m–a} & \text{kida} \\
\end{array}
\]

‘Having said that, she stares again.’

In (72), the main clause, which comes as the second part of the utterance, has the form of the empty verb clause triggered by the adverb derived with the continuative suffix _–ko_. The subject is overtly expressed by the medial demonstrative pronoun _tora_, which appears before the predicate. In keeping with an earlier observation that personal prefixes can only be used if the subject is not expressed by a full noun phrase preceding the predicate, such utterances necessitate the use of the expletive prefix _m–_ on the empty verb (§ 3.2.2). _Nota bene_, if the overtly expressed subject follows the empty verb, personal prefixes appear on the empty verb as expected; the noun phrase expressing the subject stands in such cases in apposition to the clause.

The empty verb clause can be further illustrated with an example of reported speech, many instances of which are found in the story in the online Appendix IV. The reported utterance normally comes first, and is followed by a speech-act tag. The speech-act tag consists of the empty verb, to which a personal prefix is attached identifying the speaker of the original quote. Example (73) comes from a story about a man, whose dog secretly transforms every day into a woman and cooks for him, while the man is hunting. One day, the man realizes what is happening and decides to marry the dog–woman. He concludes with the utterance reported in (73).
“Bi to dareithobiahada” la tha.
bi: to da-reitʰo–bia–ha=da 1–a=³⁸a
‘You are my wife-to-be’, he said, it is said.’

The quote is a complex equative sentence with the inalienable noun reitho ‘wife’ marked by the transformative suffix –bia and the future marker –ha, forming a nominal predicate that best translates as ‘my wife-to-be’. The argument is preposed and expressed by a free pronoun. The quote is followed by the empty verb marked by the 3rd person prefix, and a reportative marker indicting that this knowledge is obtained by hearsay. Were the author of the quote explicitly named before the speech-act tag—a relatively rare situation—the expletive prefix on the empty verb would be used. If need be, the addressee is introduced by a dative marker (§3.3.6.1).

Finally, an interesting feature of the empty verb is the possibility of attaching the collective marker –be, found on nouns and stative verbs, but normally not on active verbs (§3.4.1). This is exemplified in (74), an utterance describing a scene in which a number of stones form a straight line.

Laliâko thabeka.
lalia:–ko ³⁸–a–be–ka
in.line–CONT 3FA-E.V–COL–PFV
‘They are positioned in a line.’

In example (74), the collective marker –be is placed on the empty verb, preceding the perfective suffix –ka, which is obligatory in such cases. The collective marker in such situations encodes the multiplicity of the referents encoded by the subject. This way of marking collectivity is found in all types of empty verb clauses, including the Posture Construction, which is in fact exemplified in (74), where the posture adverb laliâko encodes the spatial arrangement of the Figures—or in other words the ‘posture’ of the set as a whole (§3.7).

3.5.4.1 Continuative adverbalizer –ko

Posture adverbs derived with the adverbalizer –ko are the building blocks of the Posture Construction, employed to express the posture of the referent. The adverbalizer –ko derives adverbs from verbs, and rarely nouns. Such adverbs can only from a predicate with the empty verb, in which case they encode the semantic content of the predicate. Semantically, the adverbs indicate that the activity, encoded by the verb to which the suffix is attached, has not been concluded yet (e.g., dukhâko ‘keep on staring’ from dukhan ‘stare’, ultimately from dukhun ‘sea’). Although technically adverbs, they can often be translated with verbs, such as ‘continue’ or ‘keep on’, since they form the predicate with the empty verb that is semantically bleached but provides the active verb morphosyntax. Alternatively, sentences with the adverbs in –ko are sometimes translated by the speakers with Dutch posture verbs, for instance staan ‘stand’, even though the Lokono equivalent
may not contain a posture term. The Dutch posture verbs indicate the activity is viewed as incomplete (e.g., He stood looking).

Phonologically, the adverbializer appears in two forms. When it is not followed by any other morphemes, it appears as –ko and sometimes as –kwa; this appears to vary per speaker. However, if an event nominalizer follows it, it always assumes the latter form –kwa. Importantly too, the vowel preceding the adverbializer –ko is always a long vowel, typically a long /a:/, irrespective of what the vowel of the root is originally. The long vowel /a:/ is typical of introversive verbs, and indeed when pairs of such verbs exist (e.g., farun ‘kill’ and faran ‘fight’), it is the introversive form only that is used with the adverbializer. The two forms of the continuative marker are exemplified in (75).

(75) Balâko dabo kanabâkwan.

sitting.on.bottom–CONT 1SG=E–PRG hear.INTRV–CONT–NMLZ
‘I was still sitting on my bottom, listening continuously.’

In (75) the first adverbializer appears on the posture root bala– ‘sitting on one’s bottom’, and is not followed by any suffixes, therefore its form is –ko. The adverb derived with this suffix triggers the empty verb construction. The empty verb is prefixed with the person marker encoding the subject and suffixed with the progressive marker. The second adverbializer is part of the nominalization that follows the empty verb. Here the adverbializer is followed by the event nominalizer, in which case the adverbializer has the form –kwa. The verb kanaban ‘listen’ is an introversive verb related to the verb kanabun ‘hear’—the continuative adverbializer derives an adverb with the former meaning only. This nominalization functions as a dependent clause of manner in (75). Manner is therefore encoded in fact in two different ways in (75), first by the adverb balâko, triggering the empty verb clause, and secondly by the nominalized adverb kanabâkwan. The latter is an instance of a more general pattern of encoding adverbial clauses with nominalization (§ 3.5.6). The former way of encoding manner, on the other hand, is central to the discussion of the Posture Construction (§ 3.7).

### 3.5.5 Relative clauses

Relative clauses are formed by attaching relativizers to stative and active verbs, but as mentioned before relativizing suffixes have also been attested with nouns. A relative clause with the object relativizer is exemplified in (76), a sentence from an instructional narrative about baking cassava bread.

(76) To di woha rhukanda no, to khali wakorosathe to budali diako.

cut.knife.INTRV–NMLZ=DIRC=3FB
cut.knife.INTRV–NMLZ=DIRC=3FB
baking.plate top
‘Like this we will cut it, the cassava that we bake on the top of the plate.’
The first (main) clause in (76) has the structure of an empty verb construction triggered by an adverbial clause with the similarity marker *din/dian*. The subject and the TAM markers are expressed on the empty verb, followed by a nominalized introversive verb *rhukan* ‘cut with a knife’. The object of the nominalization is expressed first by the 3rd person enclitic, and subsequently by the noun phrase *to khali*. The object noun phrase is modified by the relative clause that follows. The relative clause contains the transitive verb *koron* ‘bake’, suffixed with the object relativizer. The object relativizer indicates that the noun modified by the relative clause is coreferential with the object of the verb marked by the relativizer. Additionally the venitive enclitic is attached to the verb indicating that the result of the process of baking will be nearly completed by the time it will be cut. Finally, a locative expression follows encoding the location where the activity is taking place.

If instead of the object it is the subject of the verb marked with the relativizer that is coreferential with the noun modified by the relative clause, subject relativizers are employed. Whether it is a subject of an active verb (encoded by personal prefixes) or a subject of a stative verb (encoded by personal enclitics) does not play a role; the relativizers follow a nominative-accusative pattern. A relative clause with the feminine relativizer is exemplified in (77)—an utterance from a recording about the problem of legal and illegal logging companies in Suriname.

(77)  *To adayaha, dukhutho Sorhinama diako, kia wanshika nukun kia mathali kiba.*

In (77) the main verb *anshin* ‘love’ is prefixed with the 1st person plural marker encoding the subject. The complement of the verb is expressed by the nominalization *nukun* ‘taking’, the object of which is expressed by the noun phrase *kia mathali*, with the discourse marker *kia*, referring to the problem at hand. The subject of the nominalization, is expressed twice; first by the noun *adayaha* ‘government’—an abstract nominalization of the stative verb *adayan* ‘mature’, followed by a relative clause—and second by the (first) discourse marker *kia*, referring back to this whole expression. At the center of the relative clause is the verb *dukhun* ‘see’, which is suffixed with the subject relativizer, signaling that the subject of the verb marked with a relativizer is coreferential with the noun modified by the relative clause.

An analogical pattern is found with stative verbs, though stative verbs combined with a relativizer typically precede rather than follow the noun they modify, since such clause tend to be less heavy. In (78) an example is given from the traditional story in the online Appendix IV. The heroine concludes here that only *adayali*
'god'—a noun derived from the same stative verb as *adayaha* 'government'—is in charge of her fate. 40

(78)  *Adayalironki shikama sathi wadili damun.*

\[
\text{adayá-li=r̥ɨng=ki} \quad jíka-ma \quad sa-ˈt̪i̯ \quad wadílili \quad da-mín
\]

\[
\text{mature-M=only=SPEC} \quad \text{put-ABL.1} \quad \text{good–SBJ.REL.M} \quad \text{man} \quad \text{ISOA–DAT}
\]

‘Only God himself can give me a good man.’

In (78) the object of the verb *shikin* ‘put, give’ is the noun *wadili* ‘man’, which is modified by a stative verb *san* ‘good’ marked with the relativizer. It is worth reiterating that stative predicates can be formed out of both nominal and verbal elements. Importantly, the Basic Locative Clause has the form of a stative clause, the predicate of which is nominal in nature and can also be combined with relativizers in an analogical fashion. In such relative locative clauses it is the subject relativizers that are used, since the BLC is a stative clause, and as such does not have an object (see § 3.6).

### 3.5.6 Adverbial clauses

Adverbial clauses typically contain an event nominalization followed by a specialized nominal or suffix indicating the type of the clause. Adverbial clauses of location discussed below depart from this pattern in that there is no clause-specific marker that follows the nominalization. Instead there are two dedicated forms that are employed to introduce such clauses (see § 3.11.2). It is nevertheless useful to analyze locative clauses against the background of other adverbial clauses. Temporal clauses—a more representative case—contain makers such as *bena* ‘after’, *bora* ‘before’, or the suffix –*kha* ‘when’, that follow or attach to, in the case of the suffix, a nominalized verb. In (79), a temporal clause encoding an anterior event is exemplified. The speaker explains here the steps of making a swidden for planting cassava.

(79)  *Bibitin benada no, dan buburukâha.*

\[
\text{bi-}\text{bít̪i}=\text{m} \quad \text{bena=da=no} \quad \text{dāŋ} \quad \text{bi-}\text{birika}=\text{ha}
\]

\[
\text{2SGA–burn=NMLZ} \quad \text{after=DIRCT–3Fb} \quad \text{then} \quad \text{2SGA–clear.from.burnt.wood.INTRV–FUT}
\]

‘When you burn (the field), then you’ll clear the (it) from burnt wood.’

---

40 The restrictive enclitic =*ron* ‘only’ is related to the restrictive adverbializer –*ro* and the event nominalizer –*n*. Similarly to the continuative suffix –*ko*, the restrictive –*ro*, derives adverbs that can only function as a predicate with the empty verb or be nominalized with the event nominalizer. The frequent combination –*ron* may have been reanalyzed as an enclitic meaning only. As such it is only found with noun phrases. The same applies to the combinations =*kwán* ‘still’ (a combination of the continuative and the event nominalizer), and the combination =*ren* ‘exactly’ (a combination of the restrictive –*re* and the event nominalizer).
The second clause in (79) is an independent clause that can function on its own. The temporal expression *dan* ‘then’, a borrowing from Dutch, is not used by more fluent speakers and could be omitted. The verb in the preceding clause—that is, the dependent temporal clause—appears in its nominalized form *bitin* ‘burning’, followed by the temporal marker *bena* ‘after’. The subject of the nominalization is expressed by a prefix attached to the nominalization, and the object by the enclitic that follows at the end of the clause. A dependent temporal clause can also appear without any temporal adposition. In such cases it must precede the main clause, iconically indicating an anterior event.

Adverbial clauses of reason also contain a nominalization followed by a nominal marker; in this case the noun *doma* ‘reason’. Other types of clause, on the other hand, instead of a free nominal marker require a specialized suffix, such as the already mentioned –*kha* ‘when’. Other such suffixes include the (possibly diachronically complex) conditional –*harukha*, possibly analyzable as a combination of the future marker –*ha* and the simultaneity marker –*kha*. Purposive clauses require the transformative marker –*bia*, which indicates the final result of an activity. In (80), the speaker talks about the reason why he goes fishing and hunting in the forest. The discourse marker *kia* refers back to the game and fish that he catches.

(80) *Kia wayokara, wadukhunbia wasabe khona.*

‘That we sell in order (for us) to take care of our children.’

The first clause is an independent clause with the subject of the transitive verb *yokarun* ‘sell’ expressed by the 1st person plural prefix and the object by the preposed discourse marker *kia*. The nominalized verb form, in turn, marked by the transformative suffix –*bia* functions as an equivalent of a purposive clause.
3.6 Basic Locative Construction

The Basic Locative Construction (henceforth BLC) is defined by Levinson and Wilkins (2006:15) as “the predominant construction that occurs in response to a where-question”. In Lokono the BLC has the form of a stative clause, in which the Figure, the entity to be located, is expressed as the subject. The predicate, in turn, encodes the Ground, the entity with respect to which the Figure is to be located. The terms Figure and Ground were introduced by Talmy (1975) and are equivalent to later Trajector and Landmark (Lakoff 1987; Langacker 1987) and Referent and Relatum, respectively (Levelt 1996; Miller and Johnson-Laird 1976). The predicate also contains an expression of the location and goal directionality; since the BLC is a stative clause directionality marking is interpreted as location only.41 A TAM marker is always necessary in a stative clause; therefore the perfective suffix typically completes the predicate. The relevant part of the Ground involved in the spatial scene and the specific spatial relation that holds between the Figure and the Ground (or its part) can be optionally specified within the predicate as well. As such, the BLC echoes the form of a basic locative question, a stative clause too, in which the predicate contains the locative interrogative halo ‘where’. An exemplary locative question and answer are given in (81) and (82), respectively.

(81) Halonka no?
    halō–n–ka=no
    where–LOC.WHR–PFV=3FB
    ‘Where is it?’

In (81) the predicate is formed by the locative interrogative halo ‘where’, which serves as a placeholder for the expression of the Ground, its part, and the spatial relation. The interrogative is combined with the suffix –n encoding the location directionality. The perfective suffix –ka completes the predicate, the subject of which is encoded by a personal enclitic and refers to the entity to be located (i.e. the Figure). As such (81) is a typical example of a stative clause, and inherits all its features (§ 3.5.2).

In the exemplary answer to such a question, the interrogative halo ‘where’ is substituted with the Ground-denoting noun. The Ground-denoting noun can function as the possessor of an optional relational noun naming its part. This possessive phrase can function in turn as the possessor of an optional configurational noun encoding the spatial relation that holds between the Figure and the Ground. Finally, the Ground-denoting noun or the possessive phrase headed by the relational or configurational noun is combined with a directionality marker, and the perfective suffix –ka, followed by the expression of the subject.

41 The term directionality is used here in keeping with the theory proposed by Lestrade (2010), which builds upon earlier work by Kracht (2008; 2003; 2002). It corresponds to the earlier notions of Path (Jackendoff 1990) and Vector (Talmy 2000).
(82) *Ada shi diakonka no.*

\[
\begin{array}{llllll}
\text{Ground} & \text{Part} & \text{Spatial relation} & \text{Directionality and Telicity} & \text{TAM} & \text{Figure} \\
\text{tree} & \text{head} & \text{top} & \text{LOC.WHR–ATL} & \text{–ABIL2} & =3\text{F}_B \\
\end{array}
\]

‘It can be oriented toward the top of the tree tops.’

In (82) the predicate includes the Ground-denoting noun *ada* ‘tree’, which is the possessor of the relational noun *shi* ‘head’, naming the relevant part of the Ground. The possessive phrase, in turn, is the possessor of the configurational noun *diako* ‘top’, encoding the spatial relation of superessive contact. This complex noun phrase is suffixed with the location directionality marker –*n*, and the perfective marker –*ka*. The subject, encoding the Figure, is expressed by a personal enclitic—a structure diagnostic of stative clauses.

The simple structure exemplified in (82) is an instance of a stative locative clause, which can vary in its form and function. The complete structure of such a clause is represented schematically in Figure 2 on a more complex example.

![Figure 2](image_url)

**FIGURE 2.**—The schematic structure of a stative locative clause.

Building upon the general description of Lokono grammar given in the previous sections, I discuss in the following the different elements forming locative stative clauses in Lokono, many of which do not classify as the BLC. I thus illustrate the whole spectrum of locative clauses available in Lokono, and delimit the functionality of the BLC. I start from the right side of the clause represented in Figure 2, discussing first the possibility of dropping the Figure-denoting expression and the TAM marker, resulting in a bare directional phrase (§ 3.6.1). Such directional phrases can function both as elliptical answers to the basic locative question, but also as adverbial phrases indicating the location, goal, or source in other types of clauses. Secondly, I give an overview of the different TAM suffixes that can substitute for the perfective –*ka*, imbuing the stative locative clause with their semantics. Such specific cases are, however, not examples of the BLC since the semantics of the TAM suffix usually requires a specific linguistic context other than the basic locative question (§ 3.6.2). Third, I give a description of the different directionality markers that can be used in stative locative clauses, including their telic and atelic variants (§ 3.6.3). Importantly, in this section I introduce the *what*- and *where*-directionality markers—a recurrent topic in the thesis—that select different types of nouns, depending on the ontological features of their referents. This topic is discussed at length in the following chapters, therefore in this section I limit myself to the necessary background information. Since the BLC is an answer to the basic locative question, locative clauses with directionality markers other than
those encoding the location directionality (e.g., those encoding the source directionality) often fall outside the functional domain of the BLC. Nevertheless, they are an important part of spatial language. I then turn to the features of configurational nouns, which play a central role in the BLC encoding the spatial relation that holds between the Figure and the Ground (§ 3.6.4). Subsequently, I discuss relational nouns—that is, nouns naming parts of entities—which are employed to specify the relevant part of the Ground in a spatial description (§ 3.6.5). Both configurational and relational nouns play an important role in the encoding of landscape in the Lokono language (chapter 4). Finally, I discuss the expression of the Ground in the BLC, contrasting the use of nouns, pronouns, personal prefixes, and the special case of the attributive prefix ka—(§ 3.6.6).

The BLC, “the predominant construction that occurs in response to a where-question”, has its functional limitations (Levinson and Wilkins 2006:15). It is therefore substituted with other constructions if the spatial scene to be described falls outside of its functional domain. In Table 25, I give an overview of the construction types that were elicited in response to the Topological Relation Picture Series and Picture Series for Positional Verbs, together with their functional domains (Bowerman and Pederson 1992; Ameka, Witte, and Wilkins 1999).

<table>
<thead>
<tr>
<th>Construction Type</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Locative Construction</td>
<td>Default: spatial relations that are seen as resultative states, not as permanent spatial relations, and in which posture is not informationally salient.</td>
</tr>
<tr>
<td>Posture Construction</td>
<td>When posture is informationally salient, or when the Figure is a person, or when the spatial relation is reciprocal, or as a conventionalized greeting formula.</td>
</tr>
<tr>
<td>Locative Equation</td>
<td>When the spatial relation between the Figure and the Ground is seen as permanent, for instance, the relationship between a person and their home village, predictable locations of animals and spirits, relations between landscape elements, and permanent reciprocal spatial relations.</td>
</tr>
</tbody>
</table>

The other two constructions—that is, the Posture Construction and the Locative Equation—are discussed in the sections below. The Posture Construction is used when the posture of the Figure is informationally salient, and often when the Figure is a human being. It is also employed as a conventionalized greeting formula, and when the spatial relation is reciprocal (§ 3.7). The Locative Equation, on the other hand, expresses spatial relations that are considered permanent. This includes the relation between a person and their home village, predictable locations of animals and spirits, relations between landscape elements, and permanent reciprocal spatial relations (§ 3.8).
3.6.1 Figure omission and the bare directional phrase

The BLC is a complete stative clause. However, it is quite common to answer a locative question without mentioning the Figure again. In such cases, the reduced variant of the BLC is no longer a complete clause, since the Figure is expressed by the elided subject. The stative predicate in such cases disintegrates—the TAM marker cannot be used—and we are left with a bare directional phrase only. An example of such a directional phrase is given in (83)—a perfectly well-formed answer to a where-question, elicited with the Topological Relation Picture Series (Bowerman and Pederson 1992).

\[(83) \quad \text{îda lokon} \]
\[\text{i:da \quad lokò–η} \]
\[\text{calabash \quad inside–LOC.WHR} \]
\[\text{‘in the calabash’} \]

Example (83) is a directional phrase, consisting of a configurational noun loko ‘inside’, the possessor of which, îda ‘calabash’, encodes the Ground. The directionality marker indicates the location directionality. As such, (83) is not a complete clause, but it can function as an answer to a locative question.

It is worth recalling at this point that stative clauses are formed by the addition of a TAM marker to both stative verbs and nouns (§ 3.4.1). The directional phrase is in principle a nominal expression. The head of such phrases—that is, the directionality marker—is nominal in nature. Most of the directionality markers are still free forms that can combine with personal prefixes. Others, such as the location directionality marker –n, are historically traceable to free forms, but have been grammaticalized to suffixes. In any case, the directionality markers are clearly at the edge of the nominal domain, since even the free forms cannot function as the core arguments of the verb. Instead, the directional phrase headed by the directionality marker functions as an adverbial phrase encoding the location, goal, or source in active and stative clauses. This is exemplified in (84), elicited with the Put project videos (Bowerman et al. 2004).

\[(84) \quad \text{îda lokon thushika to merehe.} \]
\[\text{i:da \quad lokò–n} \]
\[\text{thi–jîka} \quad \text{to} \quad \text{merehe} \]
\[\text{calabash \quad inside–LOC.WHR \quad 5F.A–put \quad DEM:F \quad cashew} \]
\[\text{‘She put the cashew in the calabash.’} \]

In (84) the same directional phrase that was used in (83) as an answer to a locative question appears as an adverbial phrase. Since there is no TAM marker on the directional phrase, it does not form an independent stative clause. It functions as an adverbial phrase indicating the goal of motion encoded by the active verb shikin ‘put’. The goal interpretation of the directionality marker –n is attributable to the semantics of the verb, which is incompatible with static location. Such directional phrases already appeared in many examples above, but were until now called with a general term locative expression. Since the directionality markers are typically the
head of such phrases, or at least the elements that distinguish such phrases from the core arguments of the clause, in the following I refer to them as directional phrases.

3.6.2 TAM template of locative stative clauses

If a TAM marker is attached to the directional phrase, a full stative clause with the subject encoding the Figure is formed. The most frequently attested TAM marker in the BLC is the perfective suffix –ka, exemplified again in (85).

(85) *Bahu kosankai*
bahi kosa–ŋ–ka=i
house near–LOC.WHR–PFV–3M
‘He is near the house.’

In (85), the perfective suffix is attached to the directional phrase *bahu kosan* ‘near the house’, forming a stative clause, the subject of which is expressed by a personal enclitic. Other TAM markers, listed in Table 26, are in complementary distribution with the perfective –ka in all types of stative clauses, and can be used instead of it in locative stative clauses as well. Table 26 is not an exhaustive list of the TAM markers; it includes only the TAM markers that have been attested in locative stative clauses.

<table>
<thead>
<tr>
<th>TAM marker</th>
<th>Gloss</th>
<th>Meaning in locative clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>–ka</td>
<td>perfective</td>
<td>non-permanent location</td>
</tr>
<tr>
<td>–hai–ja</td>
<td>future</td>
<td>future location</td>
</tr>
<tr>
<td>–bo</td>
<td>progressive</td>
<td>immediate location (irritation)</td>
</tr>
<tr>
<td>–ra</td>
<td>counter-expectation</td>
<td>unexpected location</td>
</tr>
<tr>
<td>–na</td>
<td>expectation</td>
<td>expected location</td>
</tr>
<tr>
<td>–ya</td>
<td>veritative</td>
<td>confirmed location</td>
</tr>
<tr>
<td>–koma</td>
<td>abilitative 2</td>
<td>possible location</td>
</tr>
<tr>
<td>–li</td>
<td>volition</td>
<td>necessary location</td>
</tr>
<tr>
<td>–ti</td>
<td>desiderative</td>
<td>desired location</td>
</tr>
</tbody>
</table>

Each TAM suffix tinges the locative stative clause with its own semantics, as indicated in the last column of Table 26. Most of the markers are therefore not part of the BLC, but are listed here as possible elements of locative stative clauses in general. The BLC is an instantiation of this general template with the specific perfective suffix –ka, which is the most semantically neutral of all the TAM markers. Nevertheless, it was already mentioned that even the use of the perfective marker has certain implications, which are foregrounded when a stative clause is compared with an equative clause (§ 3.5.3). The former encodes events that are seen as resultative states, the latter does not entail such an interpretation, but implies a more permanent state of affairs. This difference is an important limitation of the
BLC, which cannot be used to express permanent spatial relations. In such cases the Locative Equation is employed instead (see § 3.8).

3.6.3 Directionality markers

The terms directionality and configuration are used in keeping with the theory proposed by Lestrade (2010), which builds upon earlier work by Kracht (2002; 2003; 2008). They correspond roughly to the earlier notions of Path and Place (Jackendoff 1990) or Vector and Conformation (Talmy 2000). Lestrade’s (2010) account significantly improves the previous analysis of spatial meaning, and is therefore adopted here. Configurational nouns encode the type of spatial relation that holds between entities (e.g. Lokono loko ‘inside’, a containment configurational noun). Directionality markers express the change of configuration over time (e.g. the suffix –mun/-n expressing location directionality, implying lack of change over time). The location directionality encodes lack of change—that is, a static configuration. I use the term location directionality to indicate what Lestrade (2010) calls place directionality, since the term place is used in many different senses in the literature on space and landscape. The goal directionality encodes a change into a new configuration, while the source directionality a change out of a configuration (Lestrade 2010). Both concepts, directionality and configuration, are discussed at length in the following chapters (particularly in chapters 7 and 8). Here, I restrict myself to sketching out the directionality system as a whole.

In Lokono there are two directionality markers conflating the location and the goal directionality. The two forms distinguish, however, between nouns that denote people and objects, on the one hand, and nouns that denote places, on the other hand (§ 3.6.3.1 and 3.6.3.2, respectively). The two forms, bithi and –n, respectively, play a central role in the discussion of the what/where distinction (chapters 7 and 8). Both of them encode telic locations and goals, but they can attach the atelic suffix –ro to mark their atelic equivalents—that is, spatial configurations that have not been fully achieved (§ 3.6.3.3). After discussing the location and goal directionality, I elaborate upon two markers of the source directionality āya and ōya. These are, in turn, indifferent to the ontological features of the referent of the noun they combine with, but encode a telicity contrast (§ 3.6.3.4). In addition, there is a secondary via directionality expressed by the suffix –di, usually signaling that the Figure is distributed over the Ground (§ 3.6.3.5). Finally, I turn to four cases of complex directionality markers, which are the combinations of the comitative oma and the simplex directionality markers (§ 3.6.3.6). All of the markers are in principle in complementary distribution. However, occasionally a directionality marker may become part of a lexicalized expression, in which case the attachment of another directionality marker may be necessary to form a directional phrase. Such nuances are discussed in the relevant subsections. It should be kept in mind that all of the directionality markers are crucial to the Lokono grammar of space, but not all of them are found in the BLC, which typically expresses the location directionality.

42 For Jackendoff, for instance, location is not a type of Path on a par with goal and source (see Lestrade 2010 for the detailed analysis of the previous accounts of spatial meaning).
3.6.3.1 Location and goal directionality: the what-marker

The directionality marker bithi conflates the goal and the location directionality— that is, it can encode both the goal of the Figure’s movement and the location of the Figure. The interpretation of a directional phrase headed by bithi depends solely on the linguistic context. A motion verb such as morodon ‘fly’ signals a goal reading. A static predicate—that is, a stative predicate or an active predicate that expresses a non-motion event (e.g., bokon ‘cook’) —implies a location. Irrespective of the interpretation, however, the marker bithi is a free nominal form, which forms a possessive phrase with the Ground-denoting noun.

Generally speaking, the free directionality marker bithi can only combine with nouns that denote people or objects, as opposed to the location and goal directionality suffix –n, which combines with other types of nouns—those that refer to places (§ 3.6.3.2). Since bithi can combine with both hama ‘what’ and halikan ‘who’, it is called the what-marker, as opposed to the directionality marker –n, which can combine with the locative interrogative halo ‘where’ and place-denoting nouns, and is therefore called the where-marker. The difference between the two is discussed in the following chapters, where it is illustrated with numerous examples, including the rare instances of nouns that can combine with both markers. In such cases, the directionality markers modulate the meaning of the noun, implying an interpretation in keeping with their semantic profile. Below, I provide only a general picture of the features of both markers. It is worth remembering that the markers conflate the goal and location directionality, but for reasons of space they are simply glossed as LOC.WHT and LOC.WHR.

The bithi marker is exemplified first as a part of the BLC—a stative clause expressing the location of the Figure. In this case, there is no motion verb hence the directional phrase with bithi, which forms part of the stative predicate, can only be interpreted as encoding the location directionality.

(86) Libithikai, ludathi bithi.
   li-bιtʃi-ka=i li-datʃi bitʃi
   3MA-Loc.WHT-PFV=3MB 3MA-father LOC.WHT
   ‘He’s by him, by his father.’

In (86), the stative predicate is formed by the directional phrase libithi ‘by him’ suffixed with the perfective –ka. The Ground is expressed first as the 3rd person prefix on the free form bithi. In apposition to the main clause, stands another directional phrase with bithi, expressing the Ground with a full noun, thereby specifying the referent of the 3rd person prefix on the first instance of bithi. The Ground is a person, which requires the use of the what-marker. The subject of the predicate, encoding the Figure, is in turn expressed by the 3rd person masculine enclitic following the predicate.

The next example illustrates the use of bithi in a clause expressing a motion event. In example (87), a directional phrase with bithi is used to verify to whom I was going at the moment.
In (87) the directionality marker bithi is used since the presumed goal of motion is a person as well. Since the predicate is formed by the motion verb ôsun ‘go’, the directional phrase Sonia bithi is interpreted as an expression of a goal, not of a location. The subject of the active verb, encoded by a personal prefix, expresses the Figure that is in motion.

It is crucial to observe that the directionality marker bithi does not specify the spatial configuration between the Figure and the Ground; this is the domain of configurational nouns discussed below (§ 3.6.4). Since the English spatial language is organized differently, in translation I am forced to use English prepositions specifying the spatial relation, for instance, by in the translation of (86). The directional marker bithi is, however, in a paradigmatic relationship with other directionality markers only, distinguishing between the conflated location and goal directionality, on the one hand, and the source and via directionality, on the other.

Apart from spatial uses, the directionality marker bithi is also found introducing the oblique object of certain verbs, such as dikhun ‘see’, wâdun ‘search’, yokhan ‘hunt’, and budedan ‘fish’. However, in this function it must always appear with the atelic suffix –ro (§ 3.6.3.3). As such, bithiro can be thought of as a specialized, possibly lexicalized form that marks the object toward which the activity is oriented, as in the following example.

In (88) the predicate contains the introversive verb yohkan ‘hunt’, related to the transitive verb yokhon ‘shoot’. The introversive verb is intransitive; therefore the hunted animal has to be introduced as an oblique object marked by bithiro.

3.6.3.2 Location and goal directionality: the where-marker

The directionality marker –n also conflates the location and the goal directionality, which are similarly disambiguated by the type of a predicate. Motion verbs imply the goal reading, while static predicates a location reading. Similarly to the bithi marker it also does not specify the spatial configuration that holds between the Figure and the Ground. However, in contrast to bithi, the directionality suffix –n combines with nouns denoting places. Since it can also combine with the locative interrogative halo ‘where’, it is called the where-marker. An important difference between bithi and –n lies in the fact that the former is a free form, and thus can combine with personal prefixes. The latter is today a bound form and thus cannot combine with such forms.
However, from a diachronic perspective the where-marker is related to the free form mun, which today functions as the dative marker only (§ 3.3.6.1 above). In the Lokono-German dictionary, umün is translated as “Nota Dative” [dative marker] with the following additional information “manchmal auch: an, bei” [sometimes also: on/to, at] (Schumann and Schumann 1882a). In the same source, under the related form mün without the expletive prefix V–, the definition is more spatial in nature: “in, nach, auf, bei, an” [in, to, from, at, on]. The collection of German prepositions speaks volumes for the difficulties the author had with pinning down the general directionality meaning of the marker. The expletive prefix V–, which is absent in the second spatial definition, is a sign of a grammaticalization process whereby the free form mun became the bound form –mün, later grammaticalized to the suffix –n, a process that must have started already in the 19th century. Numerous examples from the Lokono-German dictionary, and from the translation of the Acts of the Apostles by Schultz (1850), demonstrate that already then –mün had the same semantic profile as today’s –n. It combined with nouns denoting places, for instance, landscape terms such as horhorho ‘landform’, place names, configurational nouns, and the locative interrogative halo ‘where’—a placeholder for place-denoting expressions. In (89) an example from the definition of hálulu ‘where’ from the Lokono-German dictionary is given (Schumann and Schumann 1882a).

Example (89) is strikingly similar to its contemporary equivalent, given in (81), and repeated here as (90).

(89) Hálumünikai?
    hálulu–mün–i–ka=i
    where–LOC.WHR–EP–PFV=3M
    ‘Where is he?’

(90) Halonka no?
    halô–ŋ–ka=no
    where–LOC.WHR–PFV=3F
    ‘Where is it?’

The only difference that remains unaccounted for is the element –i, which is most likely an epenthetic vowel that today is no longer present, since syllable-final /n/ is allowed before non-nasals. As evident from the historical data, a process of grammaticalization and phonetic reduction took place, whereby the free form mün became a bound element –mün, later shortened to the suffix –n. Today, the free form is productively used as a dative marker only. The longer bound form of the directionality suffix is rare, and is only consistently attested in a few combinations given in Table 27.

43 In (89), and other examples from the Lokono-German dictionary, the orthography is left unchanged, and the parse tier does not reflect the pronunciation. The gloss tier, on the other hand, is not present in the original (i.e. the glosses are by the present author).
Two of the terms in Table 27, the locative anaphoric adverb yo and interrogative halo, are grammatical items discussed below (§ 3.9.2.2 and 3.12, respectively); their long and short forms are in free variation. The two combinations of the configurational noun ayo 'up' with the directionality marker are also interchangeable (§ 3.6.4.1). The remaining forms, âmun ‘by’ and abomon/âbon ‘under’, have a complex history involving the phonological reduction of the first element as well. The noun onabo ‘ground’ became âbo ‘under’, a form attested with both the reduced and the non-reduced form of the directionality marker and (see § 3.6.4.1). The comitative ôma was combined with the directionality marker –mun and reduced to âmun (§ 3.6.3.6). Combinations of the longer form of the directionality marker with common nouns such as onikhan ‘creek’ in (91) below, an example from a publication by the Lokono people living in French Guiana, have not been attested in the speech of the Surinamese Lokono documented in my corpus.

(91) Toho onikhanmunroron nôsa.
    to–ho  upi–kâŋ–mîn–ro=rôŋ    n–o:sa
    DEMF–PRX rain–DIM–LOC.WHR–ATL=only 3PLA–go
    ‘They went to this creek only.’ (Kayeno 2009:35)

In (91), the landscape term onikhan ‘creek’ appears with the unreduced form of the directionality marker –mun, followed by the atelic suffix –ro, and the restrictive enclitic =ron meaning ‘only’ (when alternatives exist). The whole directional phrase, preceded by a proximal demonstrative, functions as an adverbial phrase encoding the goal of motion in the event lexicalized by the active verb ôsun ‘go’.

When comparing the diachronic and synchronic function and form of the dative marker and the where-marker, the following hypothesis can be put forward. The directionality suffix developed from the dative marker due to the fact that on an abstract level the dative marks end-points of an activity (see § 3.3.6.1 above). This analysis is corroborated by the fact that the directionality suffix marks not only the location directionality, but also the goal directionality.44 The dative typically combines with person-denoting nouns, for the referents of which actions are performed. However, when combined with place-denoting nouns, the dative developed a secondary function from its general and abstract end-point semantics.

44 Such conflation of the location and the goal directionality in one form is not uncommon cross-linguistically (Lestrade 2010).
This secondary function is a direct application of the end-point semantics to place-denoting nouns, for the referents of which actions are rarely performed, but which support a directionality interpretation of a goal of movement. As the directionality meaning was crystallizing in combinations with place-denoting nouns, there appeared a need to distinguish it from the formally identical dative. The free form mun was kept for the dative function. Nothing hindered the process of phonetic reduction of the dative in combination with personal prefixes with which it typically co-occurs. Hence, the reduced forms of the dative marker were formed (see Table 17 above). The directionality function, on the other hand, became associated with the bound and later phonologically reduced form –(mu)n. This association was particularly strong in the cases where there was no ambiguity between a dative and locative reading—that is, with nouns denoting places rather than objects. The phonological reduction of the directionality marker continues today. The forms that are particularly spatial in nature—that is, certain configurational nouns and the locative demonstratives—have partly dropped the directionality marking altogether, and can often stand unmarked in directional phrases (§ 3.6.4 and 3.9.1.2, respectively). Such an origin of the directionality marker –n, also explains the need for the what-marker bithi. While the directionality suffix –(mu)n became a marker of directionality of place-denoting nouns, a different marker had to be recruited for person- and object-denoting nouns to complete the paradigm, as the form mun could only have a dative interpretation with such nouns.

Interestingly, occasionally there are cases in which the dative and the directionality meaning still need to be distinguished. As noted above, the unreduced form of the directionality marker –mun, formally identical to the free dative marker mun, is attested in a few fossilized cases. In my corpus, however, I have found an example of a different nature—a situation where the dative marker is used with a place-denoting noun, given in (92). Example (92) is one of the closing lines of a monologue about the problems of indigenous people in Suriname, and expresses the speaker’s wish that everything will turn out well. In this case, the speaker felt it necessary to use the obsolete expletive prefix V– on the dative marker to disambiguate the phrase. Due to the presence of a place-denoting noun, the combination Sorhinama mun might sound like a directional phrase with the obsolete longer form of the directionality marker.

(92) Sare tha ṭsun to Sorhinama umun.
sa–re t̃b]-a o:sı–n to surıınama i–mĩŋ
‘Let it go well with Suriname.’

Example (92) has the form of an empty verb construction triggered by the restrictive suffix –re. Importantly, the dative marker mun is prefixed with the expletive prefix V– cross-referencing the possessor expressed by a full noun phrase to Sorhinama. The expletive prefix signals that it is a free form mun that appears in (92)—that is, a dative marker. The directionality marker, whether phonologically reduced or not, is a bound form, and cannot combine with any prefixes, including the expletive. This mechanism allows the speaker to make sure that the phrase to Sorhinama umun is
not understood as a directional phrase ‘in Suriname’, but as a dative phrase expressing the benefiting party.

Summing up, in contemporary Lokono the directionality marker –n has two forms: the obsolete form –mun, found in a few combinations, and the reduced form –n. However, under certain phonological circumstances, an epenthetic vowel or syllable must be inserted before the directionality marker. If the preceding word ends in a diphthong or a consonant other than a nasal /u/, the epenthetic syllable –ni is inserted. If the noun ends in the consonant /i/, the epenthetic vowel –i is inserted. This is exemplified in the following two examples with place-denoting nouns that typically combine with the where-marker –n. Example (93) comes from a narrative about how the inhabitants of Cassipora used to travel to the capital city Paramaribo, before the dirt road was built.

(93) *Yo wáya bósa tholoko andun Paranamín.*

yo wa:ya ɓ-o:sa ɗo-loko ani Paranam–ni–ŋ


In (93) the directionality marker –n combines with a place name Paranam—a town on the Suriname river on the way to Paramaribo—encoding the goal of movement originating in the village, referred to with the locative anaphor yo combined with a telic source marker. Since the place name ends in the consonant /m/, the epenthetic syllable –ni is inserted. Similarly in (94), the landscape term karhow ‘savanna’, ending in a diphthong, requires the epenthetic syllable –ni. Example (94) comes from a narrative about a hunting trip to the forest.

(94) *Danda karhownin, yeyendwa loko dakyowathë.*

d–anda kaPow–ni–ŋ ye–yën–dwa loko

d–kóywa=ɗe

1SGA–return.REFL=VEN

'I arrived on the savanna singing and singing, and I went back home.'

It is worth noticing that in both (93) and (94) the directional phrase with the where-marker appears as the adverbial of the verb andun ‘arrive’, the closest Lokono equivalent of the English verb come. The Lokono verb necessitates, however, a goal expression, expressed here by the directional phrases with the where-marker. Source expressions, which can be found with the English equivalent come, are not found in clauses with the Lokono verb andun ‘arrive’ (§ 3.10.3).

3.6.3.3 Location and goal directionality: the atelic suffix –ro

The addition of the suffix –ro to the location and goal directionality markers bithi and –n implies that the configuration that holds between the Figure and the Ground is not reached, but that the Figure is merely oriented or moving in the direction of the Ground. The configuration itself (which is not achieved) can be left unspecified
or can be encoded by a configurational noun. This applies to both motion events as in (95) and to static scenes as in (96). The first example comes from the descriptions of the Event Triads stimulus, showing a ball rolling toward a wooden block, but never reaching it (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(95) Lôsa thibithiro, mandunko la thâmun.
1-o:sa tʃi-biːtiː-ro m-ändiː-ŋ-ko l-a tʰ-a:mĩŋ
3M--go 3F--LOC.WHT--ATL PRV--arrive--NMLZ--CONT 3M--E.V 3F--COM.LOC.WHR
‘He went toward (a wooden block), but he did not arrive by it.’

In (95) two configurations that hold between the Figure and the Ground are named. In the first clause, the predicate is the motion verb ôsun ‘go’. The goal of motion is expressed by the what-marker bithi marked with the 3rd person masculine prefix encoding the Ground (a wooden block). The atelic suffix attached to the what-marker signals that the final configuration is not achieved. The configuration is not specified in this case. The second clause has the structure of an empty verb clause triggered by the use of the privative prefix on the active verb andun ‘arrive’. The second configuration is expressed by the complex directionality marker âmun, consisting on the comitative oma, which has a secondary proximity meaning, fused with the directionality marker –mun (§3.6.3.6). Here the configuration is telic, but it is never reached since the sentence describes a negative proposition.

Example (96) in turn demonstrates the use of the atelic suffix with the where-marker. The example comes from a session based on the Picture Series for Positional Verbs material, showing a number of bottles, two of which are upside down (Ameka, Witte, and Wilkins 1999). Importantly, in (96) the atelic marker is used in a description of a static scene, not a dynamic scene, as is the case in (95) above.

(96) Ken bian, onabonroka thushibo.
kʰêm bían onabô–n–ro–ka tʰ–ʃibo
and two down–LOC.WHR–ATL–PFV 3F–face
‘And two (bottles) are upside down (lit. their faces are oriented downwards).’

In (96), the atelic marker is attached to the where-marker, which is suffixed to the configurational noun onabo ‘down’, encoding a direction on the absolute vertical dimension. The perfective suffix –ka completes the predicate. The subject is expressed by the noun shibo ‘face’, the possessor of which refers to the two bottles named by the preposed cardinal numeral. The lack of the atelic marker would imply that the two bottles are lower than the other bottles, which is not the case. The two bottles are, however, oriented toward the Ground, or in other words, placed in the direction ‘down’ as opposed to the remaining bottles, which is captured by the addition of the atelic suffix. Importantly, the atelic suffix precedes the TAM suffix, and is thus an integral part of the directional phrase. The telicity distinction is also expressed within the directional phrase in the case of the source directionality.
3.6.3.4 Telic and atelic source directionality markers

If the Figure is leaving a configuration, as opposed to being in a configuration (the location directionality) or entering a configuration (the goal directionality), the source directionality markers have to be used. These markers are normally not attested in the BLC, since the BLC is an answer to a locative question, not to a question about the source. However, directional phrases formed with the source directionality markers can function as adverbial phrases in active clauses, or when combined with relativizers, as nominal predicates in the Locative Equation (§ 3.8). For the discussion of the what/where dichotomy in the following chapters, it is useful to remember that the source directionality markers are insensitive to this distinction. The what/where split is only found in the conflated location and goal directionality.

As opposed to the location and goal directionality, atelicity is not encoded here by a separate morpheme (i.e. –ro). Instead, there are two clearly related forms âya ‘telic source’ and óya ‘atelic source’. The former marks a telic source—that is, a configuration that the Figure has left, typically entering into a new configuration at the goal. It is a free form, which can combine with personal prefixes, and is often realized as /aria/ or as /wa:ya/ after an /o/. This is exemplified in (97), which is a description of the journey that the ancestors of the inhabitants of Cassipora had embarked upon, before they founded the village.

(97) Adiâbo wâya natimakathe Mopentinro.
    ad'a:bo wa:ya na-tîma:-ka=t're mopêntî–n–ro
    Adiâbo SRC:TL 3PLA–swim.INTRV–PFV=VEN Mopenti–LOC,WHR–ATL
    ‘From Adiâbo they crossed toward Mopenti.’

In (97), the source directionality marker âya combines with the place name Adiâbo forming a phrase that functions as an adverbial. Adiâbo, the possessor, encodes the Ground from which the movement originated. The source expression is followed by the predicate consisting of the introverive verb îman ‘cross’, related to the verb timun ‘swim’. The verb is marked with the perfective suffix –ka, and the ventive enclitic =the, signaling that the movement toward Mopenti is also a movement toward the deictic center (i.e. the Cassipora village). Interestingly, the 3rd personal prefix on the verb is only used for Lokono people, implying the ancestors of the villagers. Finally, the directionality marker –n combined with the atelic suffix –ro mark the direction of movement—a new configuration that the Figure enters.

When combined with nouns that end in /a/, especially configurational nouns in /a/, such as khona ‘adhering’ in (98), the telic source marker âya is typically fused with the configurational noun. Example (98) is a sentence uttered by an inhabitant of Washabo village, who was born in Pwaka (Powakka in Sranan tongo), but does not live there anymore.

(98) Dei to Pwaka khonâyathi.
    dei to pwaka k'b'ona:ya–tʃi
    1SG DEM:F Powakka adhere.SRC:TL–SBJ,REL:M
    ‘I am from Powakka (lit. from along the Powakka creek).’
In (98) the directional phrase is combined with a relativizer forming a stand-alone nominal *Pwaka khonâyathi* ‘a man from along the Powakka creek’. The phrase functions as a nominal predicate in an equative clause, the subject of which is expressed by the 1st person free pronoun. Here too the source configuration (i.e. *Pwaka khona* ‘along Powakka’) was left in favor of a new configuration (i.e. *Washabo*).

The marker *ôya*, realized also as /oria/, is an atelic equivalent of the source marker *âya*. It implies that the Figure is moving out of a certain configuration, but this change is either not accomplished or the subsequent configuration into which the Figure is moving is obliterated therefore there is no new configuration to relate the Figure to. The two source markers are contrasted below. Example (99) comes from a depiction of a ball moving away from one wooden block toward another. In this description of a video from the *Event Triads*, the telic source marker was used (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(99)  *Thôsa thuwáya.*
\[
\begin{align*}
\text{tʰ̩-o:sa} & \quad \text{tʰ̩-wa:ya} \\
3F_{A-go} & \quad 3F_{A-src:TL} \\
& \quad '(A ball) left (the wooden block).'
\end{align*}
\]

By contrast, in the structurally identical example (100), the atelic source marker is felicitous. Here the speaker described a scene from the same stimulus, in which a ball moves away from a wooden block into an empty space, not toward another wooden block.

(100)  *Thôsa thôya.*
\[
\begin{align*}
\text{tʰ̩-o:sa} & \quad \text{tʰ̩-o:ya} \\
3F_{A-go} & \quad 3F_{A-src:ATL} \\
& \quad '(A ball) went away from (a wooden block).'
\end{align*}
\]

The interpretation of (100) is that the original configuration is not completely abandoned, or that there is no other configuration to relate the Figure to. In both (99) and (100), the Ground is expressed by the personal prefix attached to the source markers, making it evident that they are nominal in nature, though clearly part of the nominal penumbra, since they cannot function as the core arguments of a verb.

The telicity contrast can be observed in two additional examples below from natural speech. In the first case, the event is conceptualized as telic. Utterance (101) was produced in Paramaribo during a field trip to the local zoo. It was in the city (the goal), after completing the movement out of Cassipora (the source).

(101)  *Kasupori wáya wôsa ya thoyoshikwanro*
\[
\begin{align*}
\text{kasipu} & \quad \text{wá:ya} \quad \text{w-ː-o:sa} \quad \text{ya} \\
\text{Cassipora} & \quad \text{SRC:TL} \quad \text{1PL_{A}-go} \quad \text{LOC.DEM} \quad \text{elderly-house.PSS-LOC.WHR-ATL} \\
& \quad 'We went from Cassipora here, to the city.'
\end{align*}
\]

In (101) the expression of the telic source precedes the predicate, which is followed by the expression of the goal—a commonly used time-iconic order of source and
goal (even though both place-denoting nouns are clearly marked as source and goal, respectively and thus their order could be reversed). This description can be contrasted with the atelic event in (102). Here the goal is obliterated or unknown, which may suggest that the Figure is not leaving the configuration permanently.

(102) Môthiâbo wa ôsun to thoyoshikwa ôya.

The difference between (101) and (102) is expressed by the respective use of the telic ëya and the atelic ôya, and can be often translated with verbs such as leave, which combines with telic sources, and move or set out, the first of which can combine with both types of sources, and the second of which obliterates the goal. Interestingly, I have not attested the atelic ôya with configurational nouns—that is, if the configuration is atelic, it cannot be specified with a configurational noun. The telic equivalent readily combines with configurational nouns.

Finally, it is worth pointing out that the atelic marker also has as a malefactive interpretation. This is exemplified in (103), which describes what the water spirit oriyo can do if one does not obey the rules of places that harbor such spirits. If annoyed, the spirit can, for instance, make one’s bathing place grow back with water plants.

(103) Thutaka ma to kori bôya.

In (103), the spirit is said to be able to close the area cleared for bathing—that is, make plants grow in it again. The example does not have a spatial interpretation as a source, and the atelic source marker combined with the 2nd person singular prefix indicates the person to whose disadvantage this can happen. Nevertheless, all such malefactive uses of the ëya marker have a common denominator—they mark a participant from whom something is taken away.

3.6.3.5 Via directionality marker

The via directionality is a secondary directionality. It can be thought of as a subtype of the location directionality, since it can encode the location through which the Figure is distributed during the activity, as in the English example We were walking in the forest for hours. In this case, the Figure is in containment configuration with the Ground, but this relation is distributed though the whole space of the Ground. Alternatively, the via directionality is a combination of the source and goal directionalities, as in We went through the forest in an hour, in which case the Figure entered and left the configuration. In Lokono, there is a dedicated via directionality marker –di which covers both types of situations, and is distinct from
the configurational nouns (i.e. the equivalents of the English prepositions in and through). The via directionality marker combines with configurational nouns, since its function is directly related to their meaning, but also with a few landscape terms (e.g., konoko ‘forest’), and relational nouns such as shibo ‘face’. As such it is insensitive to the what/where distinction, but it cannot combine with nouns denoting people. The addition of the via directionality suffix –di can cause phonological changes of the final consonants of the configurational noun that it attaches to. A non-aspirated /k/ becomes an aspirated /kh/, and a /b/ often becomes fricativized to /f/. Occasionally, the final /o/ of a configurational noun becomes an /u/. This is exemplified in (104), which illustrates also that given the right context, the nouns marked with the via directionality marker can function as the core arguments of the verb. The example comes from an instructional narrative about weaving a basket.

(104) *Dan bukuruha thushifodi.*

\[
\begin{align*}
\text{dan} & \text{ bi–kiri–ha} \\
\text{then} & \text{ 2SG bind–FUT} \\
\text{face–VIA} & \text{ 3F bind–FUT}
\end{align*}
\]

‘Then you bind the whole front (of the basket).’

In (104) the noun *thushifodi* ‘face’ (from *shibo* ‘face’) names a part of the basket, and functions as the direct object of the transitive verb *kurun* ‘bind’. In such cases the expression *thushifodi*, with the directionality element –di, cannot be understood as an adverbial of location, since the valency condition of the verb has to be satisfied first. Such cases are extremely infrequent in the corpus, where directional phrases with –di typically function as adverbs of location.

The via directionality marker can be used to describe both dynamic and static scenes. Example (105) from the story in the online Appendix IV, for instance, does not contain a motion verb. Here the directional phrase formed by the via directionality marker –di, functions as a location adverbial to a predicate, indicating the location where the person metamorphosed into a bird will be singing in the future.

(105) *Ada shi diakhodi buyeyedwaha.*

\[
\begin{align*}
\text{ada} & \text{ ji} \\
\text{tree} & \text{ diak–o–di} \\
\text{head} & \text{ bi–ye–yen–dwa–ha} \\
\text{top–VIA} & \text{ 2SGA–ITR–melody–VZB.INTRV.REFL–FUT}
\end{align*}
\]

‘Everywhere above the tree tops you will be singing and singing.’

In (105) the addition of the via directionality marker –di to the configurational noun *diako* ‘top’ implies that the Figure will be engaged in the activity at many different tree tops. It is worth recalling that nouns denoting non-humans are transnumeral.

The via directionality marker often brings the multiplicity of the entities forming the Ground to the fore, but it is clearly different form the plural or collective marking. Example (106), in turn, is a description of what is found in the creek called *Kakhalekoyaro* ‘One With Crystals’. Here, the directional phrase is part of a stative locative clause, structurally identical to a basic locative construction, but functionally different, since the question is what kinds of Figures are found at the given Ground, not where the Figure is.

(106) *Ada shi diakhodi buyeyedwaha.*

\[
\begin{align*}
\text{ada} & \text{ ji} \\
\text{tree} & \text{ diak–o–di} \\
\text{head} & \text{ bi–ye–yen–dwa–ha} \\
\text{top–VIA} & \text{ 2SGA–ITR–melody–VZB.INTRV.REFL–FUT}
\end{align*}
\]

‘Everywhere above the tree tops you will be singing and singing.’

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In (106), the preposed phrase is the subject of the stative predicate—it refers to the white quartz crystals that are often put into the medicine-man’s rattle. The speaker explains that they can be found in the whole creek, which is why it is called Kakhalekoyaro. The addition of the directionality marker –di is understood as a multiplication of the configuration expressed by the configurational noun loko ‘inside’. In translation of the directional phrases with the via directionality marker words such as ‘all over’, ‘everywhere’, ‘throughout’ are often used.

3.6.3.6 Complex directionality markers

In addition to the directionality markers discussed above, there are four complex directionality markers—namely, âmun, mânro, âdi, and mâyə given in Table 28. All four terms are lexicalized combinations of the comitative oma and one of the directionality markers described above. However, since their compositional semantics is still mostly transparent, they are fully glossed in this thesis.\(^{45}\) The speakers, however, are not aware of the historical links described below.

<table>
<thead>
<tr>
<th>Directionality</th>
<th>Simplex marker</th>
<th>Complex directionality marker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Schumann and Schumann 1882a)</td>
<td>(Schumann and Schumann 1882a)</td>
</tr>
<tr>
<td>location &amp; goal telic</td>
<td>–mün</td>
<td>umamün</td>
</tr>
<tr>
<td>location &amp; goal atelic</td>
<td>–männiru</td>
<td>umamänniru</td>
</tr>
<tr>
<td>source telic</td>
<td>âria</td>
<td>umâria</td>
</tr>
<tr>
<td>via</td>
<td>–di</td>
<td>no data</td>
</tr>
</tbody>
</table>

Starting from the top of Table 28, the Lokono-German dictionary lists uma as the comitative, and münchen as the location and goal directionality marker (§ 3.6.3.2). Both elements are easily recognizable in the form umamün translated as “zu, bei, an” [to, by, on]. The contemporary equivalent of the combination is âmun, a form in which the link is less conspicuous. Noticing, however, that the comitative is often combined with personal prefixes, the changes are understandable. The first vowel of

\(^{45}\) In the glosses the forms are glossed as, for instance, COM.LOC.WHR—that is, a fusion of the comitative and the where-marker. Notice that the where-marker is normally glossed as LOC.WHR as it stands in opposition to the what-marker LOC.WHT. The lexicalized cases discussed here do not form such pairs and therefore the colon is not used. This applies also to the telicity contrast in the complex directionality markers (glossed as COM.SRC.TL) that contain the telic source marker (SRC:TL).
uma was regressively harmonized with the following /a/ — a process that was facilitated by the fact that three out of seven combinations of uma with personal pronouns contain an /a/ already (i.e. dama ‘1SG,COM’, wama ‘1PL,COM’, nama ‘3PL,COM’). Subsequently, a process of syllable reduction took place, whereby amamün became âmün — most long vowels in Lokono are traceable to such contracted syllables. Similarly umamüniru “hinzuwärts” [toward] is clearly composed of the comitative uma, the location and goal directionality marker –mün, and the atelic suffix –ru. In this case, however, it is mostly the directionality marker that underwent phonological changes, resulting in the term mânro. Analogically, as a result of the combination of the comitative uma with the telic source marker ariə, the form mâyə/maria appeared. Finally the form âdi is likely a combination of uma with the via directionality marker –di, although there is no data to support this analysis. The formation of the four complex directionality markers is the result of the fact that the where-marker –mun (later –n) does not combine with terms denoting people. It can, however, combine with configurational nouns (e.g., diako ‘top’), which in turn can combine with person-denoting nouns and personal prefixes (e.g., dadiakon ‘on top of me’). The concept of accompaniment, inherent in the comitative semantics must have been extended to physical proximity. As mentioned above, even today there are cases of the comitative oma used as a proximity configurational noun with person- and object-denoting nouns (§ 3.3.6.2 above).

In spite of the radical and somewhat irregular phonological reduction that took place in these four cases, the morphosyntactic and semantic features of the four complex directionality markers reflect, for the most part, the componential analysis with oma as a proximity marker. The complex directionality marker âmun encodes a telic location and goal directionality with nouns denoting humans and objects, but not places. It cannot combine with the directionality marker –di, since it contains it already, and cannot be marked as atelic, since its atelic equivalent is lexicalized as mânro. It is frequently used in directional phrases encoding the goal of movement or the location of an event, as in (107) from another traditional story.

(107) Thôsa adisa âmun.

\[ t^\circ:o:sa \quad a:mi:n \]
\[ 3F\,–go \quad cassava.trough \quad COM.LOC.WHR \]

‘She went to the cassava trough.’

In (107), the verb ôsun ‘go’ appears, the subject of which is encoded by the personal prefix. The complex directionality marker âmun forms a directional phrase with the noun hadisa ‘cassava trough’, encoding the goal of motion. Interestingly, âmun is rarely found in stative locative clauses with the perfective –ka. This may be attributed to the fact that the same form âmun, developed a secondary function as a transitive verb âmunin ‘have’, typically found in combination with the perfective marker –ka. The development of the verb âmunin ‘have’ is a case of a reanalysis of a stative locative expression. In the stative locative clause, the prefix on the configurational proximity marker oma encoded the Ground, while the subject of the clause expressed the Figure. This form was reanalyzed as an active verb, the subject of which encodes the possessor, and the object of which encodes the possessed. The
possessive verb âmunin is exemplified in (108), a sentence form a discussion about place names in the Cassipora area.

(108) To Omadâro bâtehâ, bâtehâ to Urhikoro, bâtehâ Fodiâran, bâtehâ Mopenti Karhow, bâtehâ Loshi Karhow.

DEM:F roar–F 2SG−have–PFV 2SG−have–PFV DEM:F brown–SPEC:F

2SG−have–PFV monkey–complete 2SG−have–PFV Mopenti savanna

‘Omadâro you have, you have Urhikoro, you have Fodiâran, you have Mopenti Savanna.’

In (108) the speaker lists a number of place names using the transitive verb âmunin ‘have’, prefixed with the 2nd person prefix encoding the subject, and suffixed with the perfective marker –ka. It appears that the verb âmunin ‘have’ was first used to encode immediate possessed—that is, things one has on oneself in keeping with the proximity semantics of the comitative omu from which it developed. As evident from (108), this is no longer the case. The verb âmunin ‘have’ is used in all kinds of possession scenarios. Importantly, as a verb âmunin combines with the perfective suffix –ka; the combination âmunka is therefore typically analyzed as a transitive verb encoding possession, which prevents the complex directional from forming stative clauses, in which it would have the same form âmunka.

The complex directionality marker mânro is the atelic equivalent of the directionality marker âmun. Similarly to âmun, it combines with nouns denoting people and objects. This is illustrated in example (109), which was uttered by a father whose son died. This resulted in the wife of the deceased son moving back to the village where she came from.

(109) Thôsa thoyono mânro, Pwakanro.


‘She went to (be with) her family, to Pwakaka.’

In (109), the directionality marker mânro is combined with the noun oyono ‘family’ (lit. ‘mothers’), speaking volumes for the matrilineal and matrilocal character of Lokono society. The atelic marker mânro indicates that the widow moved back toward her family, not necessarily with them. Interestingly, the following directional phrase includes a place name. In this case, the where-marker is used, which typically combines with place-denoting nouns such as Pwaka.

The complex directionality marker âdi, on the other hand, contains the via directionality suffix –di. In keeping with the semantics of its components, the combination is employed to encode configurations, in which the Figure is distributed in the proximity of the Ground. In this case, however, the type of nouns âdi can combine with is not restricted to person- and object-denoting nouns. It has also been attested with place names. Clearly, in this case the comitative semantics has been
bleached out. Typically, âdi encodes movement ‘along’ or ‘by’ the Ground, as in (110).

(110) *Aba shokothi balibo lâdi.*

\[\begin{array}{llll}
\text{aba} & \text{ʃoko–tfi} & \text{bali–bo} & 1–\text{a}d'ii \\
\text{INDF} & \text{small–SBJ.REL:M} & \text{pass–PRG} & 3\text{M}–\text{COM.VIA} \\
\text{‘A boy passes by him.’} & (\text{Barrle et al. 1989:29})
\end{array}\]

In (110), the directionality marker âdi is combined with a 3rd person masculine prefix, indicating the path that the Figure has covered with respect to the Ground. The directionality marker âdi is usually found with the motion verbs balin and fakutun, both meaning ‘pass’. I believe that it is through the collocation with these verbs that the directionality marker âdi broadened its scope.

Finally, the complex directionality marker mâya, realized also as /maria/, is furthest removed from its compositional meaning, based on the comitative oma and the telic source marker âya. The term mâya is today independent of any directionality; it can encode a source, a location, and a goal. It can also combine with all types of nouns, irrespective of the ontological status of their referents. The speakers typically translate it as Dutch kant ‘side’. It is often found, for instance, with the terms baro ‘left’ and isa ‘right’, which may be a Dutch influence (cf. linkerkant ‘left side’, rechterkant ‘right side’). This is exemplified in (111), which comes form a description of the Event Triads video, showing a ball moving across a surface from left to right (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(111) *Baro mâya lôsa isanro.*

\[\begin{array}{llllllllll}
\text{baro} & \text{ma}:\text{ya} & 1–\text{o}:\text{sa} & \text{isâ–n–ro} \\
\text{left} & \text{COM.SRC.TL} & 3\text{M}–\text{go} & \text{right–LOC.WHR–ATL} \\
\text{‘He went from left to right.’}
\end{array}\]

In (111), mâya is combined with the noun baro ‘left’, encoding the source of motion. In this case, the directionality is suggested by the iconic order of the constituents: the source precedes the verb and the goal follows it. In (112), on the other hand, the directional phrase with mâya follows the verb, and is understood as expressing the goal of motion. Example (112) comes from a story of the old chief of Cassipora, who as a young man was invited to work in West Suriname, by a creek called Kabo.

(112) *Bian wiki diaro bôsayama Kabo mâya na damun.*

\[\begin{array}{llllllllll}
\text{biâŋ } & \text{wiki} & \text{d'aro} & \text{b–o:sa–ya–ma} & \text{kabo ma}:\text{ya} & \text{na} & \text{da–mîŋ} \\
\text{two week} & \text{maybe} & 2\text{SG}–\text{go–VERI–ABIL.1Kabo} & \text{COM.SRC.TL} & 3\text{PL}–\text{E.V} & 1\text{SG}–\text{DAT} \\
\text{‘In two weeks you can surely come to Kabo, they said to me.’}
\end{array}\]

It is interesting to notice that in (112) the directionality marker mâya combines with a place name. Although this is surprising, considering the comitative origin of the directionality marker, it is in keeping with the combinatorial possibilities of the source marker âya, which is indifferent to the what/where distinction. The directionality marker mâya is also often found with the locative demonstrative ya
and the term ta ‘far’. The respective combinations ya mâya and ta mâya are used as lexicalized collocations to contrast one’s village with other villages. I believe that the term mâya in these cases, translated always as kant ‘side’, referred literally to the sides of the creek. This is also the case in (113), a sentence from a narrative in which the speaker describes the benefits of moving from his village in Suriname to a new settlement in French Guiana.

(113) Dei maria amaron bôthika.
   dei maria ama=rõm b–o:tʃika
   1SG COM.SRC.TL what=only 2SG–find
   ‘On my side (of the creek) you find everything.’

In (113) the noun mâya is combined with a 1st person pronoun, used for topicalization. The expression dei maria refers to the village in which the inhabitant lives. Interestingly, this example shows that the directional phrases with maria can also encode location, if the verb supports such an interpretation, as is the case here with the verb òthikin ‘find’, which does not allow a goal, nor a source expression.

The complex directionality markers are not discussed in the following chapters on the what/where distinction, since they are analyzed as combinations of the comitative oma, which functions also as a proximity configurational noun, with the directionality markers. As such, the complex directionality markers do not contradict the following analysis of the what/where distinction. The two forms âdi and mâya are insensitive to the distinction, as are the directionality markers –di and âya, encoding the via and the source directionality, respectively. The remaining two markers, amun and its atelic equivalent mânro, on the other hand, behave as expected. They are comparable to other combinations of a configurational noun with the where-marker –n. In this case, however, the configurational marker is oma, a proximity configurational noun, and not, say, loko ‘inside’, a containment configurational noun. The combinations presented here are furthermore lexicalized, as opposed to other combinations of configurational nouns with the directionality markers.

3.6.4 Configurational nouns

Configurational nouns express a number of specific spatial regions (e.g., diako ‘top’, bana ‘surface’). Their semantics, however, can also include information about the nature of the spatial relation (e.g., khona ‘lack of horizontal support’) or even about the nature of the Ground itself (e.g., komoloko ‘inside dim light’ or rako ‘inside a liquid’). As such, within the BLC and other types of locative clauses, configurational nouns specify the spatial relation between the Figure and the Ground. They are also important building blocks of the Lokono landscape vocabulary, forming, for instance, non-lexically phrases with the general landform term horhorho ‘landform’ specifying its spatial (and other) features (see chapter 4). In Table 29, a selection of configurational nouns is given.
The semantic content of those configurational nouns contributing to the landform vocabulary is discussed in the relevant sections (see chapter 4); the meanings of other configurational nouns are partly covered in Rybka (2010). In the following lines, I briefly comment on the content of Table 29. First of all, there are a number of diachronically related configurational nouns encoding containment relations (loko ‘inside’, rako ‘inside liquid’, roko ‘inside body part’, koloko ‘inside an unbounded container’, nakanroko ‘inside a bipartite container’ etc.). Such interest in containment configurations is also reflected in the fact that Lokono has two specialized motion verbs kodonon and fotikidin, meaning respectively ‘enter containment’ and ‘enter non-containment’—the closest equivalents of the English

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning; comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>abo</td>
<td>under; used in the relative frame of reference (from onabo ‘ground’)</td>
</tr>
<tr>
<td>awa</td>
<td>surrounding; used when the Figure occludes the Ground from vision</td>
</tr>
<tr>
<td>ayo</td>
<td>up; encodes the direction on the vertical dimension (unpossessable)</td>
</tr>
<tr>
<td>bana</td>
<td>surface; typically a non-elevated surface</td>
</tr>
<tr>
<td>boloko</td>
<td>most elevated part; the top of the head (possibly related to loko ‘inside’)</td>
</tr>
<tr>
<td>baro</td>
<td>left; used in the relative frame of reference (usually possessed)</td>
</tr>
<tr>
<td>diako</td>
<td>top; elevated part of an entity; secondary meaning ‘above’</td>
</tr>
<tr>
<td>duna</td>
<td>arm, side, only of symmetrical entities that have two sides</td>
</tr>
<tr>
<td>inabo</td>
<td>behind; from ina ‘bottom’, with an unidentified morpheme –bo</td>
</tr>
<tr>
<td>isa</td>
<td>right; used in the relative frame of reference (usually possessed)</td>
</tr>
<tr>
<td>loko</td>
<td>inside a rigid container; also used with terms for paths and roads</td>
</tr>
<tr>
<td>khona</td>
<td>adhering; used when support is not by a horizontal surface; also ‘along’</td>
</tr>
<tr>
<td>kira</td>
<td>surrounded, when the Figure has a circular shape</td>
</tr>
<tr>
<td>koboroko</td>
<td>inside a multipartite container (e.g., konoko ‘forest’), related to loko ‘inside’</td>
</tr>
<tr>
<td>koloko</td>
<td>inside an unbounded container (e.g., rain, ash, fire), related to loko ‘inside’</td>
</tr>
<tr>
<td>komoloko</td>
<td>inside dim light (occlusion of vision), related to loko ‘inside’</td>
</tr>
<tr>
<td>kosa</td>
<td>next to, near</td>
</tr>
<tr>
<td>nakanroko</td>
<td>inside the middle; from nakan ‘waist’ and roko ‘inside body’</td>
</tr>
<tr>
<td>olabwa</td>
<td>other side of the same entity; with the unidentified morpheme –bo (cf. rhebo, inabo, shibo) and the reflexive suffix –wa</td>
</tr>
<tr>
<td>oma</td>
<td>near; secondary meaning of the comitative oma</td>
</tr>
<tr>
<td>onabo</td>
<td>down; opposite of ayo ‘up’, from onabo ‘ground’ (unpossessable)</td>
</tr>
<tr>
<td>rabuduku</td>
<td>other side, opposite</td>
</tr>
<tr>
<td>rako</td>
<td>inside a liquid, typically water, but other liquids as well</td>
</tr>
<tr>
<td>rhebo</td>
<td>edge, contains the unidentified element –bo (cf. inabo, shibo, olabwa)</td>
</tr>
<tr>
<td>roko</td>
<td>inside and sometimes in contact with a body part</td>
</tr>
<tr>
<td>shi</td>
<td>head, top part</td>
</tr>
<tr>
<td>shibo</td>
<td>face, front; from shi ‘head’ with the unidentified –bo (cf. inabo, rhebo, olabwa)</td>
</tr>
<tr>
<td>shiri</td>
<td>most frontal part, nose, probably from shi ‘face’</td>
</tr>
<tr>
<td>toro</td>
<td>base, typically close to the ground</td>
</tr>
<tr>
<td>yabo</td>
<td>behind, implies occlusion of vision from the perspective of the speaker</td>
</tr>
</tbody>
</table>

### Table 29. A SAMPLE OF CONFIGURATIONAL NOUNS.
verbs enter and exit (§ 3.10.3). Secondly, there are a few forms encoding contact: *diako* ‘top’, *bana* ‘surface’, and *khona* ‘adhering’, the last of which is only felicitous if the Figure is not supported by the Ground, but glued, attached, stuck, or in any other way connected to the surface of the Ground. These three configurational nouns are discussed in detail in the chapter on landforms, where they play an important role (§ 4.5.1.2). Moreover, three forms, *awa* ‘covering’, *yabo* ‘behind’, and *komoloko* ‘inside dim light’, often imply occlusion of vision. In the first case, however, it is the Ground that is hidden from view, while in the remaining two cases it is the Figure. There are also configurational nouns encoding proximity, *kosa* ‘next to’, *oma* ‘near’, and *kira* ‘surrounding’, the third of which includes information about the circular shape in which the Figure is distributed. Finally, there are nouns that roughly translate as ‘other side’: *olabwa* ‘other side of the same entity’ (with what appears to be a lexicalized reflexive marker –*wa*) and *rabuduku* ‘other side, opposite’. Apart form the above, there are a number of terms that are frame-of-reference dependent—namely, *baro* ‘left’ and *isa* ‘right’ (relative frame of reference), *ayo* ‘up’ and *onabo* ‘down’ (absolute frame of reference), and a number of relational nouns that function as projective configurational nouns in the intrinsic frame of reference (e.g., *duna* ‘to the side of’). The projective configurational nouns are discussed below since some of them differ from non-projective configurational nouns in their behavior in the directional phrase (§ 3.6.4.1).

Configurational nouns are used in the BLC if configuration is informationally salient, signaling which spatial region is involved and how. Otherwise they are omitted, and a directionality marker is used on its own, leaving the configuration unspecified (see examples in § 3.6.3.2). The directionality marker *bithi* cannot combine with configurational nouns at all, since they do not refer to objects or people, but to spatial regions—that is, places. The atelic source marker *ôya* also does not combine with configurational nouns, a fact for which I do not have an explanation at the moment. Configurational nouns are normally attested with the where-marker –*n*, the telic source marker *áya*, and the via directionality marker –*di*. When used in the BLC, they combine with the Ground-denoting noun or the relational noun naming a part of the Ground, forming a possessive phrase. As inalienable nouns, configurational nouns do not take a possessive marker. The aquatic containment configurational noun *rako* ‘inside liquid’ is exemplified in (114), which is a description of a picture showing a vast swamp.

(114) *Onikhan rakon barhindā no ma yon bōthikama firotho thorodotho.*

\[
\begin{array}{llll}
\text{uni-} & \text{kō} & \text{kō} & \text{ma} \\
\text{rain-DIM} & \text{inside[liquid]-LOC-WHR} & \text{though-NMLZ=DIRCT=3F}_B & \text{but} \\
\text{yō} & \text{bo-tsoika–ma} & \text{firo–t’o} & \text{t’orodo–t’o} \\
\text{LOC-ANPH} & \text{2SG,–find–ABL.1} & \text{big–SBJ,REL:F} & \text{open,REFL–SBJ,REL:F} \\
\end{array}
\]

‘Although it is in a creek, there you will find a big open space.’

In the first clause of (114) the speaker uses the BLC to locate the swamp. He uses the aquatic configurational noun *rako*, since the referent is a creek, seen here as a liquid container. The speaker’s perspective plays an important role as the creek can also be thought of as, for instance, a path on which one travels, in which case *loko*
‘inside’ is felicitous. The Ground in (114) is encoded by a noun, but like all other possessable nouns, configurational nouns can attach personal prefixes to encode the possessor. Interestingly, spatial relations between landscape features are often seen as permanent and therefore encoded by the Locative Equations (§ 3.8). Swamps are, however, typically seasonal, which may explain why in (114) the BLC is used instead.

Considering that possessive phrases can be nested inside one another, it would be expected that configurational nouns can form more complex possessive phrases. However, in practice such complex forms as ‘horhorho bana diako khona meaning literally ’adhering to the top of the surface of the landform’ are unacceptable to the speakers. It is important to notice that the semantics of many of the configurational nouns makes them incompatible with one another, and even in the cases where there is no semantic conflict per se between the configurational nouns, stacking is not allowed. Rarely therefore do we attest examples such as (115), with configurational nouns bana ‘surface’ and khona ‘adhering’ appearing one after another. The example describes a picture from the Topological Relation Picture Series, showing a necklace on someone’s neck (Bowerman and Pederson 1992).

Example (115), however, does not include two configurational nouns, but one. The possessive phrase lwa bana ‘chest’ is a lexicalized body part term, followed by a configurational noun khona ‘adhering’. The evidence for the lexicalized status of such expressions is presented in the discussion of relational nouns, many of which are complex body part terms (§ 3.6.5).

Since configurational nouns form possessive phrases with the Ground-denoting noun, it is worth reiterating that reflexive marking appears on the noun encoding the object of the verb, if its possessor is coreferential with the subject of the verb (§ 3.3.3). This is only the case if the object follows the predicate. This rule extends to configurational nouns in directional phrases. The possessive marker –wa is required if the possessor (the Ground-denoting noun) is coreferential with the subject of the verb, provided that the directional phrase follows the predicate. Such reflexive marking is present, however, only in the telic location and goal directionality. This is exemplified in (116), a fragment from a story about the spirit of the tapir, an animal of extreme force and strength.

Example (115) 

(115) **Lolwa bana khonaka no.**

\[
\begin{align*}
\text{lo–lwa} & \quad \text{bana} & \quad \text{k\text{\textsuperscript{b}}ona–ka=no} \\
\text{3\text{\textsuperscript{MA}}–heart} & \quad \text{surface} & \quad \text{adhere–PFV=3\text{FA}}
\end{align*}
\]

‘It is attached to his chest (lit. surface of his heart).’

In (116), the subject of the clause is expressed by the 3\textsuperscript{rd} person prefix referring to the spirit of the animal. The object is expressed by the 2\textsuperscript{nd} person enclitic, and is thus
not coreferential with the subject and not expressed by a noun. The following directional phrase encodes the goal of the throwing motion, and consists of the configurational noun *loko* ‘inside’, the possessor of which is expressed by the relational noun *âbo* ‘back’. The possessor of *âbo*, in turn, is expressed by a 3rd person prefix, coreferential with the subject of the verb. Since the subject is coreferential with the possessor of the configurational noun (even through such *pars pro toto* mechanisms), the reflexive marking is obligatory. Interestingly, if both the direct object and the directional phrase fulfill the criteria for reflexive marking, only the direct object is marked.

Finally, as a general rule, it can be summarized that all configurational nouns can drop the location and goal directional marker –*n*, when used in a directional phrase. This is only possible if there is no atelic suffix –*ro*, which necessitates as its host a directionality marker. An example of the BLC in which the directionality marker is dropped is given in (117).

(117) *Iki kolokoka to hime.*

<table>
<thead>
<tr>
<th>iki</th>
<th>koloko–ka</th>
<th>to</th>
<th>hime</th>
</tr>
</thead>
<tbody>
<tr>
<td>fire inside[unbounded]–PFV</td>
<td>DEM:F</td>
<td>fish</td>
<td></td>
</tr>
</tbody>
</table>

‘The fish is in the fire.’

In (117), the configurational noun *koloko*, used to encode containment by unbounded containers such as fire, sunbeams, rain, or ash, is used. It is marked directly by the perfective suffix –*ka*, and there is no directionality marker –*n*, which we typically expect with configurational nouns in the location and goal directionality. Such optional omission of the directionality marker is possible with many, but not all configurational nouns. Important exceptions are discussed in the following section. Omission of the where-marker is also possible with other terms that have a clearly locative function, such as the locative demonstrative *ya* (§3.9.1.2). Such behavior can be explained by the fact that many configurational nouns have a strikingly spatial meaning (notice that they often have to be translated with English spatial prepositions). Such nouns can hardly function as the core arguments of the verb: they belong to the nominal penumbra discussed earlier (§3.3.6). Nevertheless, it should be pointed out that this varies on an individual basis. The noun *loko* ‘inside’ can, for instance, function as the core argument of the verb when used as a mensural expression (e.g., *ida loko* ‘the amount that fits in a calabash’).

### 3.6.4.1 Projective configurational nouns

Configurational nouns can be grouped into two types: *projective* and *non-projective*. The former include those configurational nouns that require the knowledge of how the spatial relation is projected, or in Levinson’s terminology, which *frame of reference* is used (Levinson 1996; 2003; Levinson and Wilkins 2006). In the relative frame of reference, the relation between the Figure and the Ground is defined from the perspective of an external viewer, as in *The glass is to the left of the TV*, which means that the Figure is located to the left of the Ground from the point of view chosen by the speaker. In the intrinsic frame of reference, the Figure is related to the
Ground by means of the parts of the Ground itself, as in *The glass is at the TV’s front*, whereby we refer to a region projected from the part of the TV to establish the location of the Figure. In the absolute frame of reference, the spatial relation between the Figure and the Ground is expressed by means of a fixed abstract bearing, as in *Amsterdam is west of Warsaw or The balloon went up*. Here, the Figure is located with respect to the abstract cardinal system or the abstract vertical dimension, respectively. The category of non-projective configurational nouns, on the other hand, includes those terms that do not rely on any frame of reference for their meaning. This group includes configurational nouns expressing the notions of containment, contact, and proximity. As pointed out in the introduction to this chapter, the only elicitation task which led to contradicting results was the Man and Tree experiment (Levinson et al. 1992)—the purpose of which is the systematic analysis of the use of frames of reference. The preliminary results are summed up below.

The absolute frame of reference is employed by two configurational nouns *ayo* ‘up’ and *onabo* ‘down’, which refer to the absolute vertical dimension. These two nouns are unpossessable nouns, which reflects the fact that they do not establish a spatial relation with respect to the Ground, but with respect to the abstract vertical axis. From both *ayo* ‘up’ and *onabo* ‘down’ reflexive motion verbs were derived—namely, *ayomuntonon* ‘move oneself up’ and *onabotonon* ‘move oneself down’. Finally, the combination of *ayo* with the directionality marker –n functions also as a stative verb *ayonin* meaning ‘high, tall’. Interestingly, both nouns have two paradigms of forms (short and long) when combined with the directionality markers, given in Table 30.

<table>
<thead>
<tr>
<th>Directionality</th>
<th>Long</th>
<th>Short</th>
<th>Long</th>
<th>Short</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location/Goal</td>
<td><em>ayomun</em></td>
<td><em>ayon</em></td>
<td><em>onabon</em></td>
<td><em>âbon</em></td>
</tr>
<tr>
<td>Via</td>
<td><em>ayomundi</em></td>
<td><em>ayondi</em></td>
<td><em>onafodi</em></td>
<td><em>âfodi/abondi</em></td>
</tr>
<tr>
<td>Source</td>
<td><em>ayo wâya</em></td>
<td><em>onabo wâya</em></td>
<td><em>âbo wâya</em></td>
<td></td>
</tr>
</tbody>
</table>

The two pairs of long and short forms with *ayo* ‘up’ are in free variation. The *ayo* forms express the absolute direction ‘up’, but cannot be used to express the relative notion ‘above’. In order to express the latter configuration, the configurational noun *diako* ‘top’ is used, which has a secondary meaning ‘above’. Noteworthy is also the rare case of the lexicalization of the *where*-marker in the via directionality (cf. *ayomundi/ayondi*, which contain both –n and –di directionality markers). The meaning ‘up’ is exemplified in (118), in which the obsolete form of the location directionality marker –*mun* appears.

(118) *Ken dei ayomunka.*

\[ k\’en\hbox{ } dei\hbox{ } ayo\hbox{ }-m\hbox{ }-ka \]

and 1SG high–LOC.WHR–PFV

‘I was up (i.e. upstairs).’
In (118), there is no expression of the Ground; the 1st person pronoun functions as the preposed subject of the stative locative clause and encodes the Figure. The context makes it clear that the speaker means ‘upstairs’.

As opposed to the two forms of ayo ‘up’, the reduced and non-reduced forms of onabo ‘down’ have different functions. They differ also from the ayo case in that here it is the configurational noun that was reduced. The reduced form ábo ‘under’ is used in the relative frame of reference, encoding a spatial relation from the perspective of the speaker. As such it forms a possessive phrase with a Ground-denoting noun, as in (119), from a casual conversation about a participant’s family.

(119) Dayonon balabalâko ma merehe ábon.
1SG–mother–PL COL–sitting.on.bottom–CONT EXPL–EV cashew under–LOC.WHR
‘My family is sitting under a cashew tree.’

Example (119) is an empty verb clause employed here since the speaker wanted to express the posture of the Figure. This is only possible through a specialized Posture Construction (§ 3.7). The location is in turn expressed by a directional phrase with the where-marker –n attached to the configurational noun ábo ‘under’, which itself forms a possessive phrase with the Ground-denoting noun merehe ‘cashew’. In contrast, the form onabo ‘down’ cannot combine with any Ground-denoting nouns, as it encodes a direction on the abstract vertical dimension. This is exemplified in (120), an utterance form the description of a scene, in which a ball rolls downward, from the Event Triads stimulus (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(120) Thurhibiswa onabonro.
    tʰi–tʰiswa onabò–n–ro
3f–move.REFL down–LOC.WHR–ATL
‘It moved downwards.’

In (120), an example of an active clause with the reflexive verb rhibisonon ‘roll itself’, the subject is encoded by the 3rd person prefix, while the direction of motion is expressed by the configurational noun onabo ‘down’, combined with the where-marker –n and the atelic suffix –ro.

Although results are inconclusive, it seems that the relative frame of reference is rarely used in Lokono. The case of ábo ‘under’ was mentioned above. The nouns isa ‘right’ and baro ‘left’ are always used with a possessor identifying the point of reference. The participants used these nouns in the description of numerous scenes, but often found themselves or their interlocutors in the director-matcher tasks confused, as to who the point of reference was and how to rotate the scene. Example

---

46 The configurational noun onabo is related to the noun onabo ‘ground’ (cf. wünabu ‘die Erde’ in the Lokono-German dictionary), which today is rarely used in its original meaning, having been substituted by horhorho ‘landform’ (chapter 4). Its original meaning is still discernible in nouns such as onabose ‘worm lizard’, from use ‘worm’.
comes from a task, in which the speakers are describing to one another a set of landform drawings (§ 4.3).

(121) Alika dan balutun akharoho, to ada deisa mâyaka.

\[
\begin{array}{llll}
\text{ali} & \text{ka} & \text{d} & \text{–} \text{–} \text{n} \\
1SG \text{–} E.V \text{–} NMLZ & & & \\
\text{bal} & \text{î} & \text{f} & \text{–} \text{n} \\
\text{akh} & \text{aro} & \text{ho} & \\
\text{to} & & & \text{ada} \\
\text{h} & \text{ow} & & 1 \text{SG} \text{–} E \text{–} \text{NMLZ} \\
\end{array}
\]

\[
\begin{array}{llll}
\text{2} & \text{–} & \text{â} & \text{–} \\
\text{NMLZ} & & & \\
\text{sit} & \text{down} & \text{–} NMLZ & \text{now} \\
\text{DEM} & \text{F} & & \\
\text{tree} \\
\text{r} & \text{aka} & \text{–} \text{ka} & \text{y} & \text{a} & \text{–} \text{ka} \\
\text{1} & \text{SG} & \text{–} \text{right} & \text{COM.SRC.TL–PFV} & \end{array}
\]

‘How I sat down now, the tree is on my left side.’

In the second (main) clause of (121), the predicate is formed by the complex directionality marker mâyá ‘side’, suffixed with the perfective marker. The possessor of the directionality marker mâyá ‘side’ is expressed by the noun isa ‘left’, which in turn is possessed by the 1st person prefix. The subject of the clause is expressed by the noun phrase to ada ‘the tree’ preposed with respect to the predicate. As mentioned before, both baro and isa appear often with the complex directionality marker mâyá ‘side’, but they are also found with the where-marker –n as in example (111) above. Quite likely the noun yabo ‘behind’ is also used in the relative frame of reference, since its meaning often includes visual occlusion from the speaker’s perspective.

The intrinsic frame of reference, on the other hand, is fairly well represented, and includes a number of configurational nouns, which function also as relational terms, such as shibo ‘front’, olabwa ‘other side of the same entity’, duna ‘side’, shi ‘top part’, shiri ‘most frontal part’, rhebo ‘edge’, boloko ‘most elevated part’.

3.6.5 Relational nouns

The role of relational nouns in the BLC is to specify the part of the Ground with respect to which the Figure is located. Just like configurational nouns, they are an optional element in the directional phrase. Similarly too, relational nouns form a possessive phrase with the Ground (e.g., onikhan rhebo ‘bank of a creek’). They differ from configurational nouns in that they can readily function as objects or subjects of the verb. Configurational nouns can only be used as the core arguments of the verb under restricted circumstances described above (§ 3.6.4).
The number of relational nouns is quite high. It includes body part terms (e.g., *duna* ‘arm’), terms for parts of plants (e.g., *daya* ‘trunk’), terms for parts of objects (e.g., *rhebo* ‘edge’), and even specialized terms for parts of landscape features (e.g., *lakabwa* ‘distributary’). All such nouns denote parts, and are inalienably possessed. In Table 31 a selection of relational terms is given, including a few terms specific to the landscape domain. Importantly, there is a small overlap between Table 31 and Table 29, since some relational nouns function also as projective configurational nouns in the intrinsic frame of reference. As a relational noun *shibo* ‘face’, for instance, refers to a part of an entity—its front, which is usually determined by its functionality. The front of a house is, for instance, the part where the door is. When referring to a part (e.g., *bahu shibo* ‘front of a house’), the noun *shibo* functions as relational noun, and can be the core argument of the verb. However, when followed by the what/where marker –<em>n</em>, the meaning of the term changes from ‘front’—a part of the entity—to ‘the area in front’, a spatial region projected form the part. This phenomenon is discussed and exemplified in the following analysis of the what/where distinction (see chapter 7 and 8).

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ari</em></td>
<td>tooth, a pitchfork formation of branches of a tree</td>
</tr>
<tr>
<td><em>babo</em></td>
<td>hole under the roots of a tree standing by a creek</td>
</tr>
<tr>
<td><em>bana</em></td>
<td>surface, leaf</td>
</tr>
<tr>
<td><em>boloko</em></td>
<td>top of the head, most elevated part</td>
</tr>
<tr>
<td><em>debo</em></td>
<td>part of the body immediately below the waist, inner side of a meander, convex part of the land</td>
</tr>
<tr>
<td><em>dâle</em></td>
<td>large, wall-like roots of a tree growing above the ground</td>
</tr>
<tr>
<td><em>dako</em></td>
<td>tributary of a creek, river, or the sea</td>
</tr>
<tr>
<td><em>daya</em></td>
<td>trunk of a tree or bush</td>
</tr>
<tr>
<td><em>doko</em></td>
<td>lap, convex part, bent</td>
</tr>
<tr>
<td><em>duna</em></td>
<td>arm, side</td>
</tr>
<tr>
<td><em>dunabo</em></td>
<td>branch of a tree, tributary of a river</td>
</tr>
<tr>
<td><em>îma</em></td>
<td>mouth of a river</td>
</tr>
<tr>
<td><em>ina</em></td>
<td>buttocks, bottom part</td>
</tr>
<tr>
<td><em>lakabwa</em></td>
<td>distributary of a creek or river (maybe related to <em>lakadun</em> ‘scatter’)</td>
</tr>
<tr>
<td><em>nakan</em></td>
<td>waist, middle</td>
</tr>
<tr>
<td><em>olabwa</em></td>
<td>other side of the same entity</td>
</tr>
<tr>
<td><em>orhe</em></td>
<td>bend, especially in a river or road</td>
</tr>
<tr>
<td><em>rhebo</em></td>
<td>edge, bank of a creek, edge of forest, savanna</td>
</tr>
<tr>
<td><em>shi</em></td>
<td>head, top part</td>
</tr>
<tr>
<td><em>shibo</em></td>
<td>face, front part</td>
</tr>
<tr>
<td><em>shiri</em></td>
<td>nose, most frontal part</td>
</tr>
<tr>
<td><em>shirima</em></td>
<td>headland</td>
</tr>
<tr>
<td><em>shiroko</em></td>
<td>headwaters</td>
</tr>
<tr>
<td><em>toro</em></td>
<td>heel, base, close to the ground</td>
</tr>
</tbody>
</table>
In the BLC, and in other locative clauses, relational nouns—identifying a part of the Ground—are often followed by a configurational noun specifying the type of relation that holds between the part of the Ground and the Figure. This is exemplified in (122), which is a description of a picture showing a swamp.

(122) Onêbera to, liba rhebo khona.

\[\text{on–êbera to liba tebo khona} \]
\[\text{rain–AUG DEM/F river edge adhering} \]
\[\text{‘It is a swamp, by the edge of the river.’} \]

In (122), the main clause is an equative clause in which the landscape term onêbera ‘swamp’, a combination of oni ‘rain’ and the augmentative suffix –êbera, functions as the predicate, the argument of which is the feminine demonstrative to. Following this identification comes a directional phrase with the configurational noun khona ‘adhering’. The configurational noun is unmarked for location directionality—that is, the where-marker is dropped. The possessor of the configurational noun is expressed by the possessive phrase liba rhebo, itself also a possessive phrase headed by the relational noun rhebo ‘edge’ and containing the noun liba ‘river’, a borrowing from Sranantongo. Interestingly, here the location is neither expressed as a BLC, which encodes spatial relations seen as resultative states, nor as the Locative Equation, which encodes spatial relations that are permanent (e.g., spatial relations between landscape features). Instead a bare directional phrase is employed which is indifferent to the resultative/permanent opposition (see also 3.8).

Such complex directional phrases, including both a relational and a configurational noun are common. It is thus not surprising that the combination of a relational and a configurational noun that often co-occur with each other can become lexicalized. This leads to two possible outcomes: complex relational nouns and complex configurational nouns. The latter case is exemplified by the configurational noun nakanroko ‘inside a bipartite container, between’, which is a lexicalized possessive phrase containing the relational noun nakan ‘waist, middle’ and the configurational noun roko ‘inside body part’. Such forms have the features typical of configurational nouns: they cannot easily function as the core argument of the verb, and they can drop the where-marker in directional phrases.

The alternative result, a complex relational noun, is more interesting. Some body part terms consist of a relational noun a configurational noun, for instance, shiri loko ‘nostril’ (lit. ‘inside of the nose’). Others, however, include as the first element a cranberry morpheme. Take as an example the term miroko ‘corner of the mouth’ and rheroko ‘outer side of the mouth, lips’ containing the morphemes *mi ‘corner’ and *rhe ‘edge’, which do not appear as free forms today.\(^{47}\) The latter morpheme is also found in rhebo ‘edge’. The degree of lexicalization of such configurational phrases has consequences for their morphosyntactic behavior in directional phrases. If the spatial configuration that needs to be expressed is identical to that expressed by the configurational noun that is lexicalized in the body part term, there are two options. Some terms behave as if the configurational term is still functional, as in (123).

\(^{47}\) Unless indicated otherwise the * symbol marks reconstructed forms.
(123) *Aba mathali dashiri lokoka.*

\[ \text{aba mat'ali da-firi loko-ka} \]

\[ \text{INDF thing 1SGA–nose inside–PFV} \]

‘There is something in my nose.’

In (123), the configurational noun *loko* ‘inside’ forming the body part term *shiri loko* ‘nostril’ appears with the perfective suffix –*ka* attached to it (the where-marker is optionally dropped). This implies that configurational noun, which is part of the body part term, functions as part of the directional expression.

Other terms behave as if the configurational noun already became part of the complex lexicalized body part term, therefore requiring a new configurational noun to follow it to express the same type of configuration, as in (124).

(124) *Limiroko lokoka luyorhi.*

\[ \text{li–miroko loko–ka li–yuʁi–tʰe} \]

\[ 3MA–corner.mouth inside–PFV 3MA–tabacco–POSS \]

‘There is a cigarette in the corner of his mouth.’

In (124) the body part term *miroko*, although clearly containing the configurational noun *roko* ‘inside body’, requires the configurational noun *loko* ‘inside’ to form a directional phrase. This test distinguishes terms such as *shiri loko* ‘nostril’ and *rheroko* ‘lips’, in which the configurational term still retains its function, from *miroko*, in which the configurational term became a lexicalized, dysfunctional part of the body part term.

However, there is also a difference between terms such as *shiri loko* ‘nostril’ and *rheroko* ‘lips’. When the directional phrase requires a configurational noun that is different from the one that forms the body part term, the *loko* of *shiri loko* is simply replaced by the right configurational term. This is not the case for *rheroko* ‘mouth’, in which case an extra configurational noun has to be used, such as *khona* ‘adhere’ in (125). If the spatial relation was that of containment, *rheroko* is not followed by an additional configurational noun—that is, the element *roko* of *rheroko* functions as the configurational noun.

(125) *Bámunka aba mathali burheroko khona.*

\[ \text{b–a mín–ka aba mat'ali bi–ṭeroko kʰona} \]

\[ 2SGA–have–PFV INDG thing 2SGA–mouth adhere \]

‘You have something on your lips.’

In (125) the noun *rheroko* ‘mouth’ behaves like a completely lexicalized term, without a configurational noun. It has already been noticed above that lexicalization of possessive phrases is a productive way of coining new terms in the domain of plant and animal names (§ 3.3.5). This observation can now be extended to the domain of body part terms. The point of the above discussion is to demonstrate, however, that the lexicalized expressions differ in the degree of the integration of their constituents. In the case of body part terms, this manifests itself in their behavior in the directional phrase. Yet both plant and animal terms as well as body
part terms discussed here are more lexicalized than landform terms described below (chapter 4). In the case of plant and animal terms, the possessor cannot be substituted with a personal prefix, while in the case of landform term this is still possible, and in fact often practiced. In the case of body part terms, the possessor can be substituted with a personal prefix. Body part terms are therefore quite similar to landscape terms in that they possessor and the possessed do not form a lexicalized whole; internally many body part terms do differ in the extent to which the combination of a relational and configurational noun is lexicalized. Yet, in the domain of body part terms there is no lexicalized common denominator that functions as the sole possessor of body part terms. Rather, body part terms combine with personal prefixes or nouns denoting people or animals. In the domain of landforms, there is a unique beginner—namely, horhorho ‘landform’—which is part of all landform terms (e.g., horhorho bana ‘surface of landform’). This is discussed further in the chapter on landforms (see chapter 4).

3.6.6 The encoding of the Ground

Within the Basic Locative Construction, but also in more complex types of locative clauses, the Ground can be expressed by free forms such as nouns, pronouns, and demonstratives, or by a prefix attached to relational nouns, configurational nouns, or directionality markers, depending on the complexity of the expression. The choice is guided by the same principles that determine the use of nouns, pronouns, demonstratives, and prefixes in other contexts. Generally speaking, nouns are used when a new Ground is introduced into discourse. In the case of answering a locative question, the Ground is therefore often encoded by a noun, since it is likely to be new information. When talking about spatial relations concerning Grounds that are already established in the discourse, personal prefixes are preferred. Pronouns are typically used for topicalization, while demonstratives for contrast and emphasis. Moreover, two configurational nouns—namely, ayo ‘up’ and onabo ‘down’—encode directions on the absolute vertical dimension, and are never possessed. Finally, the attributive prefix ka– is occasionally attested with configurational nouns as in example (126), which was elicited with the Picture Series for Positional Verbs (Ameka, Witte, and Wilkins 1999).

(126) Kêke kalokoka khali doli.

\[
\begin{array}{llll}
\text{kêke} & \text{kê} & \text{ka} & \text{loko} & \text{ka} & \text{ali} & \text{doli} \\
\text{basket} & \text{ATR} & \text{inside} & \text{PFV} & \text{bitter cayenne} & \text{tuber} \\
\end{array}
\]

‘The tubers of the bitter cassava are in the basket.’

In (126) the Figure is expressed by the possessive phrase khali doli ‘cassava tubers’ following the predicate. The Ground is expressed by the noun kêke ‘type of basket’. The predicate consists of the configurational noun loko ‘inside’ and the perfective suffix –ka. It is not clear why in this example the speaker used the attributive prefix, which can be omitted without affecting the grammaticality of the sentence, nor its meaning. The use of the attributive prefix ka– is here reminiscent of the use of the expletive prefix k–, and a better understanding of such examples may shed light on the possible historical relation between the attributive ka– and the expletive k–.
Finally, there are rare cases in which the Figure/Ground dichotomy, which we have until now taken for granted, is put to a test—namely, spatial configurations of entities in which none of them stands out as the Figure or the Ground. Instead, both entities are considered the Figure and the Ground at the same time, and the spatial relation that holds between them is seen as reciprocal. In such cases, the attributive prefix on the configurational noun, encoding the Ground, has the same referent as the subject of the predicate, encoding the Figure. Example (127) is a description of a picture from the Picture Series for Positional Verbs showing two sticks standing side by side (Ameka, Witte, and Wilkins 1999).

(127) Kakosakada no.
ka–kosa–ka=da=no
ATR–near–PFV=DIFCT=3fB
‘They are near each other.’

Example (127) is the complete answer given by the speaker to describe such a scene. The two entities, which are the same type of entity (sticks), are encoded by the 3rd person feminine enclitic. This enclitic is unspecified with respect to number; here it refers to a plural referent. There is no expression of the Ground, neither in the preceding, nor in the following discourse. Instead, the attributive prefix—taking the place of a personal prefix encoding the Ground—is in this case coreferential with the subject. Literally, the sentence could be read as They have a “near” spatial relation. This pattern is not uncommon as such, but it is uncommon in stative locative clauses. Reciprocal spatial relations are typically expressed by a subtype of the Posture Construction in which the attributive prefix is used (§ 3.7.4). In the case of stative clauses, such use of the attributive prefix has been attested only with one noun—namely, kosa ‘near’. This is clearly attributable to the fact that kosa encodes a symmetrical spatial relation, prone to such a reciprocal interpretation.48

---

48 Although not related to the topic of the expression of the Ground, one idiosyncratic form should be mentioned as well. The configurational noun loko ‘inside’ seems to have been combined with the attributive prefix ka– resulting in a stative verb kalokon ‘have a hole’.
3.7 Posture Construction

The predicate of the BLC does not contain a verb; it is a complex stative predicate built out of the Ground-denoting noun, relational and configurational nouns, and a directionality marker suffixed with the perfective –ka. In Lokono there is therefore no class of positional verbs—that is, posture verbs that are obligatory in the BLC, comparable to Dutch staan ‘stand’, liggen ‘lie’, and zitten ‘sit’ (Ameka and Levinson 2007). In Dutch such verbs encode the posture of the Figure, and are obligatory in most spatial descriptions (e.g., Het boek ligt op tafel, lit. ‘The book lies on the table’). In fact, Lokono does not even have a class of posture verbs—that is, verbs expressing the position or internal configuration of an entity. This does not imply, however, that Lokono lacks means to express posture or that posture is less important to the speakers. When information about posture needs to be expressed, the Lokono speakers have at their disposal a set of posture adverbs and a dedicated construction, which allow for the expression of posture. The relevant structure, called the Posture Construction (henceforth PC), has the form of an empty verb clause with posture adverbs derived with the adverbializer –ko/–kwa. In the following sections, I first summarize the morphosyntactic features of the construction (§3.7.1). Subsequently, I give an overview of the posture adverbs used in the PC and their morphosyntactic features (§3.7.1). I then discuss the functional domain of the PC in comparison to that of the BLC (§3.7.3). Finally, I present a construction that has the same form as the PC, but is used to encode reciprocal spatial relations instead of posture (§3.7.4).

3.7.1 Morphosyntactic features of the Posture Construction

The PC has the typical features of an empty verb clause (§3.5.4). The main verb is the empty verb o/a, to which the TAM markers and the personal prefixes encoding the subject are attached. The collective marker –be can also appear on the empty verb if followed by the perfective suffix –ka. The expletive prefix m– is used if the subject is expressed by a preposed noun phrase. The semantic content—that is, the information about the posture—is encoded by an adverb derived with the adverbializer –ko/–kwa (e.g., kurumwâkwan ‘sitting with legs under one’s bottom’). As with other adverbs derived with the adverbializer, reduplication is employed to encode collectivity. Finally, if the Ground needs to be expressed, it is introduced as a directional phrase, functioning as an adverb of location to the empty verb. Example (128) is an illustration of the features of the PC. It was elicited with the Picture Series for Positional Verbs stimulus showing a number of footballs on the ground (Ameka, Witte, and Wilkins 1999).

(128) Burheburhêko tha to kayrhêro udabe orhorho diako.

birê–birê–ko  tê–a
COL–lying–CONT 3F.A–E.V

 to  ka–yroê–ro  ida–be  ororo  d’ako
DEM:F  ATR–throat–F  skin–COL  landform  top

‘A number of footballs are sitting on top of the ground.’
In (128), the subject is encoded on the empty verb with the 3rd person feminine prefix, as well as by the appositional noun phrase *to kanyorhê ro udabe* ‘the footballs’ (lit. ‘the many skins of the one with the neck’). Since the subject is not preposed, the expletive prefix *m-* is not used on the empty verb. The noun *uda* ‘skin’ is a set noun, and as such cannot combine with the plural marker *–non*, but it combines with the collective suffix *–be* signaling collectivity. Collectivity is also encoded by the reduplicated adverb *burehburhêkwan*. The directional phrase at the end of the clause encodes the location. It consists of the configurational noun *diako* ‘top’, unmarked for the location and goal directionality. The possessor of the configurational noun, *horhorho* ‘landform’, encodes the Ground.

3.7.2 Morphosyntactic features of posture adverbs

Lokono posture adverbs are derived with the adverbializer *–ko/–kwa*, for instance, *balâko* ‘sitting on one’s bottom’. The vowel preceding the adverbializer is always a long vowel, in the vast majority of the cases a long /aː/. The morphosyntactic possibilities of such adverbs are limited; they appear exclusively in clauses with the empty verb. They can, however, be nominalized with the event nominalizer *–n*. When preceding the event nominalizer, the adverbializer always has the form *–kwa*, for instance, *balâkwan* ‘sitting on one’s bottom’. The nominalized form is used in this thesis and in other publications on Lokono as the citation form of such adverbs, since the adverbial form is context-dependent. A selection of such (nominalized) adverbs is given in Table 32. Worth noticing is the semantic specificity of the posture adverbs, particularly visible in the vocabulary of sitting positions, such as *balâkwan* ‘sitting on one’s bottom’, *kurumwâkwan* ‘sitting with legs under one’s bottom’, *kurwâkwan* ‘sitting with legs crossed’, and *teberêkwan* ‘squatting on the ground’. In a few cases (i.e. the adverbs of hanging), I was unable to define the meanings of the adverbs precisely at this point in the analysis.
TABLE 32.
A SAMPLE OF DERIVED POSTURE ADVERBS.

<table>
<thead>
<tr>
<th>Nominalized adverb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>dinabâkwan</td>
<td>standing in an upright position</td>
</tr>
<tr>
<td>balâkwan</td>
<td>sitting on one’s bottom</td>
</tr>
<tr>
<td>kurumwâkwan</td>
<td>sitting with legs under one’s bottom</td>
</tr>
<tr>
<td>kurwâkwan</td>
<td>sitting with legs crossed</td>
</tr>
<tr>
<td>teberêkwan</td>
<td>squatting on the ground</td>
</tr>
<tr>
<td>yowâkwan</td>
<td>hanging (possibly a variant of yolâkwan)</td>
</tr>
<tr>
<td>yolâkwan</td>
<td>hanging (possibly a variant of yowâkwan)</td>
</tr>
<tr>
<td>wêlâkwan</td>
<td>hanging, covering (possibly from Spanish vela ‘sail’)</td>
</tr>
<tr>
<td>duluwâkwan</td>
<td>leaning (from the noun dule ‘support’)</td>
</tr>
<tr>
<td>burhêkwan</td>
<td>lying (from the stative verb burhen ‘horizontal’)</td>
</tr>
<tr>
<td>tholâkwan</td>
<td>hanging lazily in a hammock</td>
</tr>
<tr>
<td>lakâkwan</td>
<td>scattered (related to lakadun ‘scatter’)</td>
</tr>
<tr>
<td>laliâkwan</td>
<td>lined up vertically (related to lalidin ‘arrange vertically’)</td>
</tr>
<tr>
<td>fitâkwan</td>
<td>clinging (from fitin ‘paste’)</td>
</tr>
<tr>
<td>kodîwâkwan</td>
<td>rolled in a circle (related to kodidin ‘roll up’)</td>
</tr>
<tr>
<td>hôrhôdâkwan</td>
<td>piled-up (related to horho ‘pile, sediment’)</td>
</tr>
<tr>
<td>shîfâwâkwan</td>
<td>upside-down (related to shibo ‘face’)</td>
</tr>
<tr>
<td>hâtâkwan</td>
<td>stuck (related to the stative verb hâtata ‘stutter’)</td>
</tr>
</tbody>
</table>

Some of the posture adverbs have corresponding active verbs listed in Table 33. Such verbs usually encode an activity that results in the posture encoded by the adverb. The adverb balâkwan ‘sitting on one’s bottom’, for instance, is related to the active verb balutun ‘sit down on one’s bottom’ derived with the verbalizer –tV from the root balu– (§ 3.4.3). From such verbs, in turn, a number of other forms can be derived, such as the verbs balutadan and balutukutun. The former means ‘sit together in a group’, for instance, when paying a visit to a family. The latter is inextricably linked to the cultural practices related to the first menstruation. It is a causative verb derived with the suffix –kVtV, meaning ‘have a girl sit alone for a period of time after her first menstruation in a structure constructed specifically for this purpose.’
TABLE 33.
ACTIVE VERBS RELATED TO POSTURE ADVERBS.

<table>
<thead>
<tr>
<th>Nominalized adverb</th>
<th>Meaning</th>
<th>Active verb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>dinabâkwan</td>
<td>standing</td>
<td>dinabun</td>
<td>stand up</td>
</tr>
<tr>
<td>balâkwan</td>
<td>sitting on one’s bottom</td>
<td>balutun</td>
<td>sit down</td>
</tr>
<tr>
<td>burhêkwan</td>
<td>lying on the ground</td>
<td>burhêdin</td>
<td>throw on the ground</td>
</tr>
<tr>
<td>kurwâkwan</td>
<td>sitting with legs crossed</td>
<td>kurun</td>
<td>bind</td>
</tr>
<tr>
<td>hâdâkwan</td>
<td>stuck</td>
<td>hâtañun</td>
<td>block</td>
</tr>
<tr>
<td>teberêkwan</td>
<td>squatting on the ground</td>
<td>teberedonon</td>
<td>sit down</td>
</tr>
<tr>
<td>horhodâkwan</td>
<td>piled-up</td>
<td>hörhodokoton</td>
<td>pile up</td>
</tr>
<tr>
<td>yolâkwan</td>
<td>hanging</td>
<td>yoladun</td>
<td>bend down</td>
</tr>
<tr>
<td>wêlakwan</td>
<td>hanging</td>
<td>wêladun</td>
<td>drape</td>
</tr>
<tr>
<td>duluvâkwan</td>
<td>leaning</td>
<td>duladun</td>
<td>support</td>
</tr>
<tr>
<td>lakâkwan</td>
<td>scattered</td>
<td>lakadun</td>
<td>scatter</td>
</tr>
<tr>
<td>laliâkwan</td>
<td>lined-up vertically</td>
<td>lalidin</td>
<td>arrange vertically</td>
</tr>
<tr>
<td>fitâkwan</td>
<td>clinging</td>
<td>fitin</td>
<td>paste</td>
</tr>
<tr>
<td>kodîwâkwan</td>
<td>rolled in a circle</td>
<td>kodidin</td>
<td>roll up</td>
</tr>
<tr>
<td>shifwâkwan</td>
<td>upside down</td>
<td>shifudun</td>
<td>turn</td>
</tr>
</tbody>
</table>

It is difficult today to ascertain the grammatical class of the bases from which the adverbs are derived. Some of the bases appear to be cranberry morphemes (e.g., the root of tholâkwan ‘hanging lazily in a hammock’). In a few cases a nominal source has been found. The base of horhodâkwan ‘piled-up’, for instance, is the term horho ‘sediment, pile’, which is the non-rereduplicated form of the noun horhorho ‘landform’ (chapter 4). Yet the root horho appears to have been first verbalized with the verbalizing suffix –dw, before serving as the input for the adverbializer. The verbal source is also confirmed in cases such as fitâkwan ‘clinging’, derived from the active verb fitin ‘paste’. It seems therefore that the posture adverbs are derived from verb in keeping with the general tendency of the adverbializer –ko/-kwa. As mentioned above, however, the adverbializer is also occasionally attested with nouns, a feature of the Lokono derivational morphology as a whole (§ 3.5.4.1 above).

3.7.3 Functional limits of the Posture Construction

The functional domain of the PC is delimited in principle by two factors: informational salience and animacy. The PC is also used as a conventionalized greeting formula. The Picture Series for Positional Verbs stimulus was designed specifically as a set of scenes contrasting not only different postures, but also scenes, in which posture is informationally salient with those in which it is not (Ameka, Witte, and Wilkins 1999). A good example of the former spatial arrangement is illustrated in Figure 3, showing seven bottles; some of them are standing while others are lying on the table. The participants in the elicitation session were asked for each of such scenes to say where the Figures are. In other words, they were asked a simple locative question that typically triggers the BLC. Although the participants occasionally did use the BLC in the description of such scenes, and
answered simply *tafra diako* ‘on top of the table’, using the borrowing *tafra* ‘table’ (from Sranantongo or Dutch), a more typical answer is the one given in (129) below.

```
(129) Abaro kho botoli, *tafra diakoka, aburuku dinabâko ma, kabunbe dinabâko ma, ken bîthi burheburhêko ma.

ab–ro=kʰo    botoli    tafra    d’ako–ka
one–F=NEG    bottle    table    top–PFV

abiriki    d’inaba:–ko    m–a
some        standing–CONT EXPL–E.V

kabîm–be    d’inaba:–ko    m–a
three–COL   standing–CONT EXPL–E.V

k’êm    biʧi    birê–birê:–ko    m–a
and        four        COL–lying–CONT EXPL–E.V

‘(There) are many bottles on the table, some are standing, three are standing, and four are lying.’
```
In (129) the speaker first made a general comment using the BLC, and declared that there are many bottles on the table, employing litotes to express multiplicity (abaro kho ‘many’, lit. ‘not one’). In the remainder of the description, however, the speaker paid attention to the differences in the postures of the various bottles. The second, third and fourth clause of (129) are examples of the PC. In all three cases the expletive prefix m– appears on the empty verb, since the subjects are topicalized and appear as noun phrases before the predicates. The posture adverbs dinabâko ‘standing’ and burhêko ‘lying’ express the semantic content of the predicates, differentiating the two types of postures illustrated in the picture.

Animacy and humanness are the other criteria that determine the choice between the BLC and the PC. The PC is preferred when describing spatial scenes, in which the Figure is an animate entity. If the Figure is a human, the PC is particularly frequent. This is illustrated in (130), which comes from an elicitation session based on the Man and Tree stimulus, consisting of pictures of a toy man and a toy tree in different spatial configurations (Levinson et al. 1992). The participants in these director-matcher tasks were asked to describe as well as they could a chosen picture form such a set of pictures, so that another participant could identify the same picture in the same set placed in front of him.

(130) Abali kakathi dinamâko ma, ken dukhâko la ada bithiro.
    aba-ːli kaki-ːtfi d’inama-ːko m-a
    one-ːM alive-ːSBJ.REL-ːM standing-ːCONT EXPL-ːE.V
    k’en dik’a-ːko l-a ada bitfi-ro
    and see.INTRV-ːCONT 3M3-ːE.V tree LOC.WHT-ːATL
    ‘A man is standing, and is he is looking toward the tree.’

In (130), two examples of an empty verb clause appear. The first clause is an example of the PC, encoding the posture of the toy man with the adverb dinamâko, a speaker-dependent variant of dinabâko ‘standing’ that appeared in (129). In this case, the use of the PC is motivated by the nature of the Figure, not the informational salience of posture; the man is standing in all of the pictures in the Man and Tree stimulus (Levinson et al. 1992). Even though it is a toy, and not a real person, the PC was the most common way of describing such scenes.

The PC has also a socially important function as a conventionalized greeting formula. I mentioned before that a common way of greeting people is with a rhetorical question about the activity or state they appear to be engaged in (§ 3.5.4). The relevant example (69) is an equative clause repeated below as (131). Such greetings are conventionalized and there is no irony implied here.

(131) Balabalâkwanthiboda hi?
    bala-ːbala-ːkwa-ːn-ːtfi-ːbo=da hi:
    COL-ːsitting.on.bottom-ːCONT–NMLZ-ːSBJ.REL-ːM–PRG=DIRECT 2pl.
    ‘How do you do?’ (lit. ‘Are you still sitting now?’)

In (131), the complex nominalization with the masculine relativizer and the progressive marker functions as a nominal predicate of the argument expressed by
the 2nd person pronoun. Importantly, at the core of the predicate in (131) is the nominalized posture adverb *balâkwan* ‘sitting on one’s bottom’. Such greetings are in fact usually framed as empty verb clauses, and typically encode posture.

(132) *Balabalâko habo?*

\[
\begin{align*}
\text{bala–bala:–ko} & \quad \text{h–a–bo} \\
\text{COL–sitting.on.bottom–CONT} & \quad \text{2PL, E–V–PRG}
\end{align*}
\]

‘How do you do?’ (lit. ‘Are you still sitting now?’)

Example (132) is pragmatically equivalent to (131), but it has the form of an empty verb clause triggered by the adverb. Other posture adverbs used in such greetings are *burhêkwan* ‘lying’, *tholâkwan* ‘hanging lazily in a hammock’, *kurumwâkwan* ‘sitting with legs under one’s bottom’, and *kurwâkwan* ‘sitting with legs crossed’. A typical reply to such a greeting echoes the structure of the question, and a departure from this convention may have undesirable overtones. If one uses, instead of a posture adverb, an adverb derived from a verb encoding an activity (e.g., *dorâkwan* ‘weaving’), the speaker may be signaling irritation on his part. Breaking the convention signals that the speaker is engaged in a particular activity other than maintaining the posture.

Some of such greetings depart from the original idea of a rhetorical question about what one is doing at the moment. The following example is considered rude, but not offensive. It does at the same time speak volumes for the typical Lokono sense of humor, which is quite sexually explicit.

(133) *Wêlawêlako habo?*

\[
\begin{align*}
\text{we:la:–we:la:–ko} & \quad \text{h–a–bo} \\
\text{COL–hanging–CONT} & \quad \text{2PL, E–V–PRG}
\end{align*}
\]

‘How are you guys?’ (lit. ‘Are you guys a-hanging?’)

Employing a *pars pro toto* figure of speech, the greeting in (133) is used to address a group of men by jokingly referring to the male genitalia (that are hanging). An analagical greeting can be used with women, substituting *wêlawêlak* ‘hanging (as a group)’ with *ôleôlêko* ‘pierced (as a group)’. Both greetings are rumored to be typical of the Sabajo family, the members of which are said to be real jokers at heart. On a more serious note, it is worth noticing that the greeting pattern is conventionalized. So much so that even people whose Lokono language skills are rudimentary are familiar with it. It should come as no surprise that the most frequent greeting a field linguist hears in the village, which is on the whole Dutch and Sranantongo speaking, is *Ben je aan het wandelen?* ‘Are you walking around?’. This greeting, which is a calque of the Lokono formula, says as much about the persistence of the typical greeting patterns of the Lokono, as it does about the activities of the field linguist in the, sometimes vast, Lokono villages.

3.7.4 Expression of reciprocal spatial relations

A reciprocal spatial constellation is a situation in which neither of the two or more entities involved is profiled exclusively as the Figure or the Ground. Typically this
involves entities that are of the same type (e.g., two stick, three stones etc.) or at least entities of similar size (e.g., a pot and a tree stump). In such situations, the entities involved can be considered on a par and are treated as the Figure and Ground simultaneously with respect to each other. An example of such a situation was discussed above—a rare case of the BLC, in which the attributive prefix takes the place of a personal prefix attached to the configurational noun, which normally encodes the Ground, and cross-references the subject, typically encoding the Figure. This rare case of the BLC is explained by the fact that the configurational noun kosa ‘near’ lexicalizes a spatial relation that is fairly symmetrical (see the discussion of example (127) above).

Such spatial arrangements are, however, more frequently encoded by an empty verb clause. Posture as such is not important in such cases, but the reciprocal spatial relation describing the internal configuration of set of entities is clearly a semantically-motivated deviation from the general pattern of encoding posture (i.e. the internal configuration of a single entity). The main verb in such situations is the empty verb o/a, which bears the TAM suffixes and the person markers. The spatial relation is encoded by a configurational noun prefixed with the attributive ka–, which fills the possessor slot of the inalienable configurational noun. The configurational noun is then suffixed with the adverbializer –kôl–kwa, forming an adverb encoding the reciprocal spatial relation, for instance, kadunâko ‘side to side’. The final vowel of the configurational noun becomes a long /aː/, as is usually the case when the adverbializer is attached. The directionality marker is never present on configurational nouns in such adverbs, even on those that normally require it, such as shibo ‘face’. Similarly to other adverbs in –kôl–kwa, the adverbial form is strictly limited to the empty verb context, but the adverbs can also be nominalized (e.g., kadunàkwan ‘side to side’). An example of such a construction is given in (134), a description of a picture from the Picture Series for Positional Verbs stimulus showing four cassava tubers lying on the ground (Ameka, Witte, and Wilkins 1999).

(134) Kadunâko thabeka.
   ka–dunaː–ko  tʰ–a–be–ka
   ATR–arm–CONT 3F.X–E.V–COL–PFV
   ‘They are one next to another.’

The clause structure of (134) does not differ significantly from the structure of the PC. The subject is expressed here by the 3rd person feminine prefix on the empty verb, which is suffixed with the collective and the perfective suffixes. The spatial relation is expressed by the adverb kadunâko ‘side by side’. In Table 34 adverbs attested in this construction, together with the configurational nouns they are derived from are listed. Similarly to other adverbs in –kôl–kwa, they can be reduplicated to encode collectivity, if there are more than two entities involved. Notice that collectivity normally implies more than one; in the cases discussed here it implies more than two, since two is the minimum number of entities required for a reciprocal relation to hold.
TABLE 34.
ADVERBS ENCODING RECIPROCAL SPATIAL RELATIONS.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Meaning</th>
<th>Nominalized Adverb</th>
<th>Reduplicated form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>loko</td>
<td>inside</td>
<td>kalokâkwan</td>
<td>kalokokalokâkwan</td>
<td>inside one another</td>
</tr>
<tr>
<td>diako</td>
<td>top</td>
<td>kadiakâkwan</td>
<td>kadiakakadiakâkwan</td>
<td>on top of one another</td>
</tr>
<tr>
<td>kosa</td>
<td>near</td>
<td>kakosâkwan</td>
<td>kakosakakosâkwan</td>
<td>next to one another</td>
</tr>
<tr>
<td>khona</td>
<td>adhering</td>
<td>kakhonâkwan</td>
<td>no data</td>
<td>adhering to one another</td>
</tr>
<tr>
<td>duna</td>
<td>side</td>
<td>kadunâkwan</td>
<td>kadunakadunâkwan</td>
<td>side to side</td>
</tr>
<tr>
<td>inabo</td>
<td>behind</td>
<td>kainabâkwan</td>
<td>kainabakainabâkwan</td>
<td>behind one another</td>
</tr>
<tr>
<td>shibo</td>
<td>face</td>
<td>kashibâkwan</td>
<td>no data</td>
<td>facing one another</td>
</tr>
</tbody>
</table>

If need be, the subject of the clause can be expressed by an appositional noun phrase, as in example (135), in which two different entities are framed in a reciprocal spatial relationship. Interestingly, example (135) is a description of a photograph in which a pot is lying next to a tree stump, an immovable entity, which an English speaker would typically profile as the Ground.

(135)  *Dwada matho ada toro, kakosâko tha.*

\[
\text{dwada ma–}^\text{f} \text{o \ \ \ ada \ toro \ ka–kosa:–ko \ \ t}^\text{h}–\text{a}
\]

pot \ COM–SBJ.REL:F \ tree \ stump \ ART–near–CONT \ 3f–E.V

‘A tree stump and a pot are next to one another.’

In (135) the subject is explicitly named by a preposed noun phrase. In Lokono noun phrases can only be conjoined by turning an expression with the comitative into a relative clause, forming a larger noun phrase. In (135) the possessive noun phrase *ada toro* ‘tree stump’ is the head of the phrase, modified by a relative clause *dwada omatho* ‘one with a pot’. I am not sure why in this case the expletive prefix *m–* is not used on the empty verb.49

If posture is informationally salient it is encoded by the nominalized form of the posture adverb following the empty verb. As in (136), which describes the position of the speaker and me sitting in front of a laptop.

(136)  *Kakosâko wa balâkwan.*

\[
\text{ka–kosa:–ko \ \ w–a \ bala:–kwâ–ŋ}
\]

ATR–near–CONT \ 1PL–E.V \ sitting.on.bottom–CONT–NMLZ

‘We are next to one another, sitting (on bench).’

In (136) the nominalized form *balâkwan* ‘sitting on one’s bottom’ follows the empty verb. Such event nominalizations function often as equivalents of adverbial clauses (§ 3.5.6); in (136) the nominalization functions as an adverbial clause of manner.

49 It may be the case that *dwada matho ada toro* is a separate equative clause to the speaker, therefore not affecting the use of the personal prefixes on the empty verb in the second clause.
3.8 Locative Equation

The BLC is the default—that is, the most frequent—construction opted for in the linguistic encoding of spatial relations. It is an instantiation of a more general locative stative clause, in which the directional phrase is suffixed with the semantically most neutral of the TAM markers, the perfective –ka. However, when a stative clause is compared with an equative clause, the functional limits of the BLC become conspicuous. Stative clauses encode states that are considered potentially changeable. On a more abstract level, such states are the results of previous events and causes of future events. On the level of linguistic form, the obligatory TAM markers modulate the different temporal, aspectual, and modal dimensions of the state. The equative clause, on the other hand, has primarily an identificational function, which is in principle detached from the temporal, aspectual, and modal template. Such dimensions can, however, be specified by the optional addition of some TAM markers to the nominal predicate (§ 3.5.3). The difference between the two types of clauses is particularly pronounced in the case of the perfective –ka, which is the only TAM marker not allowed in equative clauses. The use of the perfective marker implies a resultative, temporary reading. This implication is absent in equative clauses, in which the argument is identified as or equated with the nominal predicate, implying a permanent relation.

This difference between stative and equative clauses translates into the difference between the BLC and the Locative Equation (henceforth LE). The former encodes spatial relations that are seen as resultative, temporary states. The latter encodes spatial relations that are considered permanent. Such equative clauses were occasionally attested as responses to the elicitation materials used, but were attested more often in the corpus of Lokono recordings. The scarcity of such constructions in the elicited data is attributable to the fact that the stimuli focus predominantly on spatial relations that involve non-permanent relations between tabletop type of entities. Below I first compare the structure of the LE to that of the BLC (§ 3.8.1). Subsequently, I discuss the functional domain of the LE. I first present a permanent spatial relation in which the Figure is a human being—the relationship that holds between a person and their home village (§ 3.8.2). Secondly, I discuss cases in which the relation is encoded as the LE, because it is thought of as stereotypical—that is, the predictable habitats of animals and spirits (§ 3.8.3). Subsequently, I turn to the landscape domain, in which the relationship between landscape elements is often encoded by the LE because of the spatial and temporal stability of the referents (§ 3.8.4). Finally, the LE is also used to encode permanent reciprocal spatial relations (§ 3.8.5).

3.8.1 Morphosyntactic features of the Locative Equation.

On the level of linguistic form, the stative and equative clauses share the core of the predicate, which in one case is suffixed with the perfective –ka, and in the other case nominalized with a relativizer. Given the right context, in both cases the core element can be a verbal or a nominal expression. In the specific subtypes of stative and equative clauses expressing spatial relations, the BLC and the LE, the shared element is the directional phrase, which is nominal in nature. In the BLC, the
directional phrase forms a stative predicate by attaching the perfective suffix –ka. In the LE, the directional phrase is combined with a relativizer forming a nominal predicate. The complexity of the directional phrase is irrelevant. As in all directional phrases, minimally the Ground and the directionality have to be expressed, but additional relational and configurational nouns can be included in keeping with the restrictions on the combinatorial possibilities of the elements of the directional phrase discussed in previous sections. The two constructions differ, however, in the encoding of the Figure. In stative clauses, and therefore also in the BLC, the subject can be encoded by personal enclitics. In equative clauses, and hence also in the LE, the subject cannot be expressed by personal enclitics, but only by free forms, since such clauses are the de facto juxtapositions of two stand-alone nominals. The LE does not depart therefore in any other way from a typical equative clause. The relativizers used include only the subject relativizers, since the stative clauses have one core argument only: the subject encoding the Figure. The argument typically follows the predicate, but can be fronted for topicalization (§ 3.5.3). Interestingly, the BLC has a corresponding basic locative question; analogically there is also a locative question echoing the structure of the LE (§ 3.12).

3.8.2 Relation between a person and their home

The relation between a person and their home is important to everyone. In Lokono, the linguistic manifestation of this strong bond is found in the use of the LE instead of the BLC to contrast belonging to a certain place and being at a certain location. Consider the two examples given below. In both cases, the directional phrase is the same: Kasuporhin ‘in Cassipora’. The Ground is the Cassipora village and the spatial configuration is unspecified (i.e. there is no configurational noun). The directionality is expressed by the where-marker –n, typically combining with place names.

(137) Kasuporhinkada we.
    kasipuŋ–n–ka=da=we
    Cassipora–LOC.WHR–PFV=DFOXCT=1PL.B
    ‘We are in Cassipora.’

Example (137) is an instance of the BLC stating the location of the Figure. It is a stative clause, which manifests itself in the use of the B-class personal enclitic. Example (137) could be used when talking on the phone with someone in another village to describe one’s current location. This form and meaning can be contrasted with example (138).

(138) Kasuporinhithada wei.
    kasipuŋ–n–tʃi=da  wei
    Cassipora–LOC.WHR–SBJ.REL=M=DFOXCT 1PL
    ‘We are in Cassipora’ (lit. ‘We are the people in Cassipora’)

Utterance (138) is an example of the LE, in which the directional phrase is combined with a relativizer and functions as a nominal predicate. The argument of
this nominal predicate is expressed by the 1\textsuperscript{st} person plural free pronoun. This particular example comes from a narrative about the inhabitants of the Cassipora village, in which it serves to affirm that the inhabitants were always there and will always be there too. It expresses a spatial relation that is considered permanent or timeless, even if at a given point in time it may not obtain. Example (138) could also be used as an answer to a question: Where do you live? An alternative way of expressing such a relation is a stative clause with the verb *kakun* 'alive' and a directional phrase functioning as an adverb of location.

If a person has moved to a new village, as used to be the case for many Lokono men, since the village exogamy was prevalent, the directional element is changed. Instead of the location and goal directionality, the telic source directionality marker *āya* is employed, as in example (98) above given here again as (139).

Example (139), although employing the source directionality, is still an instance of the LE, in which a spatial relation is expressed as an equative clause, thus imparting it with temporal permanence. Interestingly, the venitive marker could be added to the predicate in (139), which makes it difficult to treat such locative expressions as instances of fictive motion (Langacker 1987; Talmy 1983). This source formula with the venitive marker is also used to express descent—that is, the membership in a particular family, as in (140).

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(139) *Dei to Pwaka khonāyahit.*

\[
\text{dei to pwa}kā 
\text{kōna:ya–tji}
\]

1SG DEM:F Powakka adhere.SRC:TL–SBJ.REL:M

‘I am from Powakka.’ (lit. ‘from along the Powakka creek’)

Example (139), although employing the source directionality, is still an instance of the LE, in which a spatial relation is expressed as an equative clause, thus imparting it with temporal permanence. Interestingly, the venitive marker could be added to the predicate in (139), which makes it difficult to treat such locative expressions as instances of fictive motion (Langacker 1987; Talmy 1983). This source formula with the venitive marker is also used to express descent—that is, the membership in a particular family, as in (140).

(140) *David kurukuya lokwarishitithe li.*

\[
\text{david kirikiya lok(o) waria–tji=tē e li}
\]

David family inside SRC:TL–SBJ.REL:M=VEN DEM:M

‘He is from David’s family.’ (ITS 1975:2)

Worth noting is the fact that Lokono and English use here different spatial dimensions to encode blood relations. While English uses the vertical dimension encoded in the verb *descend*, the Lokono verb *thokodon* ‘descend’ is unacceptable in such contexts.\(^{50}\) Instead the venitive marker encoding motion toward the deictic center is used. It is tempting to think of the Lokono pattern in terms of the Lokono village exogamy, which necessitates in fact that the married-in male member of the community literally come toward the deictic center from another village.

3.8.3 Typical habitat of animals and spirits

The LE can also be used to describe the typical locations where certain animate beings are found—that is, the habitats of certain animals and spirits. The Lokono

\(^{50}\) The verb *descend* comes of course from Latin, and English has also other ways of expressing blood relations.
people are very knowledgeable about where certain species make their burrows and nests, where they typically graze and gather fruits, or where they come to drink water. Certain animals are particularly strongly associated with specific places, which occasionally leads to naming locations after the animal activity that takes place there. However, I have only limited data on animal species due to the focus on landscape classification, as opposed to ethnobiological classification. As part of the landscape research, however, I have discussed with the speakers the typical abodes of spirits, particularly the water spirit oriyo and the spirits associated with rock formations (see also chapter 5 and 4, respectively). The oriyo (from ori oyo ‘snake’s mother’) is the most powerful of the spirits according to the Surinamese Lokono. The speakers on the whole are not willing to discuss matters related to the oriyo spirit, most likely due to linguistic taboos and general restrictions and avoidance strategies, employed in order not to attract the spirit’s attention. Nevertheless, I was informed by the speakers what the typical habitat of the spirit looks like. An example from the discussion of the oriyo spirit is given in example (141).

\[(141) \text{Thushikwa, iniabo lokotho to.} \]
\[
\begin{align*}
  t^3_i-\text{fikwa} & \quad jniabo \quad loko-t^3_o \quad \text{to} \\
  3F_A-\text{house.} \text{POSS} & \quad \text{inside-} \text{SBJ.REL:} \text{F} \quad \text{DEM:F}
\end{align*}
\]
\‘(Water spirit’s) house, it is in the water.’

In (141) the predicate is expressed by the directional phrase iniabo loko ‘inside water’ combined with a relativizer. The argument in turn is encoded by the deictically unmarked demonstrative pronoun to. The preposed appositional noun phrase is coreferential with the subject. This sentence is a general statement about the stereotypical locations that harbor the oriyo type of spirits. The deictically unmarked demonstrative is used here not with reference to any particular location that can be identified in space, but as placeholder for the preposed subject expression. I have not attested an equivalent construction with the stative verb kakun ‘alive’ in the context of animals and spirits, which leads me to the conclusion that the verb kakun is used predominantly with human referents.

Such examples can be contrasted with (142), which comes form a discussion of the oriyo spirits with another elder in Cassipora. In this case, however, the speaker was not making a general statement but commenting on a particular oriyo spirit that lives in a creek nearby his house. Notice that the speaker uses kriki, a borrowing from Sranantongo (and ultimately from Dutch kreek or English creek), to talk about the water feature.

\[(142) \text{Yaraka thushikwa, tora kriki.} \]
\[
\begin{align*}
  ya-ra-ka & \quad t^3_i-\text{fikwa} \quad \text{to-ra} \quad \text{kriki} \\
  3F_A-\text{house.} \text{POSS} & \quad \text{DEM:F-MED} \quad \text{creek}
\end{align*}
\]
\‘There is its home, that creek.’

Example (142) is a locative stative clause, in which the predicate contains the medial demonstrative adverb yara, while the subject is encoded by the following noun phrase. In this case, the spatial relation is not seen as stereotypical; on the contrary the speaker is focusing on the spirit that lives in a creek close to his house—hence
the use of a stative clause. This is also clear from the use of the deictically marked demonstrative pronouns and adverbs in (142), which do refer to a specific location. The LE and the BLC can be employed to encode such contrasts between stereotypical relations and specific instantiations of spatial configurations. This extends to the animal world as well, but it should be stressed that such knowledge of both the local faunal and spiritual kingdoms is quickly disappearing. Only a fraction of the cultural practices associated with the spiritual world described in the historical ethnographic record can be observed today (Goeje 1942; Renselaar and Voorhoeve 1962; Roth 1915; 1924; 1929).

3.8.4 Permanent spatial relations between landscape features

The Locative Equations is also used when the Figure is a landscape feature. In this case, the LE is preferred over the BLC since landscape features are in principle immovable entities, and therefore their location is permanent. The LE is of course used only when a landscape feature is the Figure, not the Ground. This is exemplified in (143), which is a description of a photograph showing a number of large stones in the middle of a creek.

(143) *To kuduro thokoborokhodi, oniabo koborokhoditho to.*

To kidi-ro *koborok*o–d’i

oniabo *koborok*o–d’i–t’o

DEMF heavy–F 3F,–inside{multipartite}–VIA

oniabo *koborok*o–d’i–t’o

DEMF water inside{multipartite}–VIA–REL:F

DEMF ‘The stones are surrounded by it, they are surrounded by the water.’

In (143) the speaker first uses a directional phrase, which is neither combined with a relativizer nor suffixed with a TAM marker, and as such escapes the resultative/permanent dichotomy. He uses the configurational noun *koboroko*, which encodes a situation in which the Figure is surrounded by the Ground from multiple sides. The via directionality suffix is employed to signal that the Figure is distributed through the Ground. The speaker then uses the same configurational noun in a clause that has the form of the LE. The Figure is expressed by the deictically unmarked demonstrative, coreferential with the noun phrase *to kuduro* ‘the heavy one’, speaking volumes for the immovability of the referent (i.e. stone). The Ground is encoded by the noun *oniabo* ‘water’.

Such examples can again be contrasted with the use of the BLC. Example (144) comes form a description of a scene from the *Put Project* stimuli, showing a person throwing a number of stones on the ground (Bowerman et al. 2004).

(144) *Horhorho diakoka to shibabe.*

ho*ro*  d’ako–ka to jiba–be

landform top–PFV DEM:F stone–COL

‘The stones are on the ground.’
In (144), instead of the LE, the speaker uses the BLC. The Figure in this case is expressed by the noun shiba, another term for ‘stone’. In this case, the relationship between the Figure and the Ground cannot be seen as permanent: the speaker witnesses the state before and after the event. The stones were not on the ground; they were thrown by the actor in the video, and can also be easily picked up. Such differences in the expression of location have to be attributed to the Figure, which in one case is considered immovable and permanently located at the Ground. In the other case, however, the Figure, much smaller and movable, is only temporarily in the specific configuration with the Ground. The LE is also attested with other nouns encoding landscape elements. These include kaikai ‘whirlpool’ (possibly related to the stative verb kaima ‘angry’), a water feature associated with the oriyo spirits due to its potential as a dangerous place where one can easily drown, and omadâro ‘rapids’ (encoding the auditory experience lexicalized in the verb omâdun ‘roar’), and also associated with water spirits, since boats can easily capsize on the rocks and sink in such places.51 I have also attested the LE with the noun shikwahu ‘village’.

Importantly, some of the stimuli that I used to elicit landscape vocabulary may have induced the speakers to use the BLC instead of the LE. In the chapter on landforms, I describe a set of drawings showing outlines of landforms that were used to elicit landform vocabulary (§ 4.3). Since the drawings form a set of alternating configurations, and as such suggest changeable states, they may have induced more instances of the BLC then is typical of the landform domain in natural discourse. Interestingly, occasionally the speakers used a bare directional phrase, as in the first part of (143) or in the description of a swamp discussed earlier (example (122)). The bare directional phrase may be considered another way to avoid the resultative implications of the BLC, since it is neither a stative clause, nor an equative clause. This methodological problem does not affect the analysis of landform terms given below, which are encoded within the directional phrase—the common denominator of both the BLC and the LE. However, the stimuli could have biased the choice of the construction. The difference between encoding permanent and temporary spatial relations should be kept in mind when developing stimuli for landscape elicitation. In more general terms, elicitation materials such as the Topological Relation Picture Series (Bowerman and Pederson 1992) could be enhanced by adding scenes in which immovable entities, permanently located in space (e.g., landscape features) are the Figure.

3.8.5 Permanent reciprocal relations

Finally, the LE is also employed to express reciprocal spatial relations that are considered permanent. In such situations the speakers opt for a combination of the

51 Interestingly all but one petroglyphs found in Suriname are located next to a water feature; in many cases on large stones forming part of such rapids (Versteeg 1998). The meanings of such petroglyphs remain a mystery today, but there have been claims that some of them were used as warnings against the dangerous rocks in such places, which seasonally may be hidden under water, constituting a danger to passing boats (Goeje 1942).
elements of the Posture Construction and the Locative Equation. Reciprocal spatial relations are typically encoded by a subtype of posture adverbs discussed earlier (§ 3.7.4). Such adverbs include a configurational noun prefixed with the attributive prefix ka– and suffixed with the adverbializer –ko–kwa. If the relationship is considered permanent, the nominalized form of the adverb is combined with a relativizer, forming a nominal predicate. This specific situation is exemplified by the description of a picture showing a number of tree stumps arranged in line. The tree stumps are in a reciprocal relationship—that is, none of them is specifically profiled as the Figure or the Ground, since they are identical entities (tree stumps). The relationship is considered permanent since the tree stumps are rooted in the ground.

(145) *Kadunäkwanto ada ina.*

\[\text{ka–} \text{din} \text{–} \text{kwa–} \text{n–} \text{t}^\text{o} \text{ada} \text{ ina} \]

\begin{tabular}{llll}
ATR & arm & CONT & NMLZ=SBJ.REL:F \tabularnewline tree & bottom \end{tabular}

‘Tree stumps standing one next to another.’

In (145) the possessive noun phrase *ada ina* ‘tree stump’ functions as the argument of the complex nominal predicate built around the configurational noun *duna* ‘arm’. The noun forms a posture adverb, which appears in its nominalized form *kadunäkwan* ‘side by side’. Finally the nominalization is combined with a relativizer forming a nominal predicate. Such spatial relations may be relatively rare, but the morphological means used to encode them provide us with additional evidence for the functional limits of the Basic Locative Construction, the Posture Construction, and the Locative Equation.
3.9 Deixis and reference tracking

Deictic forms have appeared in numerous examples above, but their discussion has been postponed until now, since some of them can appear only in the directional phrase. In this sketch of the grammar of space, it is their morphosyntactic features related to the discussion of the what/where distinction that I focus upon. The many aspects of the ecology of such forms, including their non-spatial uses and accompanying gestures are only mentioned briefly in the following sections. The analysis presented here is based on the data that were elicited or retrieved from the corpus, following the guidelines for analyzing deictic expressions outlined in Wilkins and Pederson (1996) and Levinson (1999). This methodology resulted in a systematic picture of the Lokono deictic forms and meanings. First, Lokono has a set of forms that function as demonstrative pronouns, which can be used both attributively and pronominally. Such forms can refer to most types of entities when used as the argument in equative clauses, or as the subject or object in active and stative clauses. However, in the directional phrase, the locus of the what/where distinction, they pattern like person- and object-denoting nouns (§ 3.9.1.1). Secondly, there is a set of demonstrative adverbs, which cannot function as the core arguments of the verb or arguments in equative clauses. They are found in directional phrases only, in which they pattern like place-denoting nouns (§ 3.9.1.2). The demonstrative pronouns and adverbs share, however, their combinatorial possibilities with a set of demonstrative suffixes encoding distance from the speaker. Furthermore, there is a presentative demonstrative used solely to introduce new referents into the discourse space (§ 3.9.1.3). Finally, there are a number of anaphoric devices worth mentioning, including the person forms discussed above and demonstratives treated here, but also a dedicated locative anaphoric adverb yo and the discourse marker kia (§ 3.9.2). Among deictic forms I also include the venitive and the andative markers, which encode the movement of the Figure with respect to the deictic center. These two forms are discussed separately in the section on motion (§§ 3.10.5 and 3.10.6).

3.9.1 Demonstrative pronouns and adverbs

Demonstrative pronouns and adverbs serve as expressions helping to identify a person, object, or a place by using a spatial contrast involving the location of the speech act participants. They are often accompanied by a pointing gesture made with the tip of the nose or the hand. Such gestures also appear with the presentative demonstrative hai, but not with the discourse marker kia or the locative anaphoric adverb yo. Both demonstrative pronouns and adverbs share a paradigm of demonstrative suffixes encoding distance from the speaker. Lokono demonstrative pronouns differ, however, from demonstrative adverbs in their morphosyntactic behavior. The former can be used as the core arguments of the verb or as arguments in equative clauses. They can also be used in noun phrases, in which they can function attributively (as determiners) or pronominally (as possessors of nouns). As possessors, they can function as the modifier of relational and configurational nouns in the directional phrase. Finally, they can also function as the Ground-denoting expression combining with the directionality markers directly (§ 3.9.1.1).
Demonstrative adverbs, on the other hand, can appear as part of the directional phrase only, in which they combine directly with the directionality markers (§3.9.1.2).

The morphological build-up of demonstrative pronouns and adverbs crosscuts the categorical division. Both types of demonstratives are built out of a deictically unspecified demonstrative root (li, to, na, ya) and a demonstrative suffix encoding distance from the speaker (–hV, –ra, –kVtV). The first three roots (li, to, na), when appearing without the demonstrative suffixes function a secondary function similar to the English definite article. They signal that the referent is identifiable in a given context without making use of the distance distinctions (see §3.3.4).

<table>
<thead>
<tr>
<th></th>
<th>Deictically Unspecified</th>
<th>Proximal</th>
<th>Medial</th>
<th>Distal</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M</td>
<td>li</td>
<td>lhi</td>
<td>lira</td>
<td>likita</td>
</tr>
<tr>
<td>3F</td>
<td>to</td>
<td>toho</td>
<td>tora</td>
<td>tokota</td>
</tr>
<tr>
<td>3PL</td>
<td>na</td>
<td>naha</td>
<td>nara</td>
<td>nakuta</td>
</tr>
<tr>
<td>PLACE</td>
<td>ya</td>
<td>yaha/yâ</td>
<td>yara</td>
<td>yakuta</td>
</tr>
</tbody>
</table>

All four deictically unspecified demonstratives can be further subdivided into the root-formative consonants (l–, t–, n–, y–) and the root-formative vowels (–i, –o, –a, –a). The root-formative consonant y– expresses the ontological status of the referent as a place. The same consonant is also found in the locative anaphoric adverb yo, an element referring to places that were already mentioned in discourse (§3.9.2.2). As such, their referents belong to the same category as the referents of nouns that combine with the where-marker. The root-formative consonants of the remaining demonstratives are clearly related to the personal prefixes (li–, thu–, na–), of which the feminine form became de-aspirated in the demonstrative. The root-formative consonant of the plural demonstrative na, expresses the ontological status of the referent as human and plural. The origin of the plural demonstrative na and the corresponding prefix na– is uncertain, but together with the n-initial plural –non, the three forms are the only grammatical elements in the language encoding human plural referents. The formative-vowels of the demonstrative roots li and to can be traced back to the masculine and feminine gender markers –i and –o, respectively. The demonstrative li encodes referents that are masculine, which typically include Lokono men only. The form to, on the other hand, can refer to any grammatically feminine entity.

The demonstrative suffixes encode what Diessel (1999:35) calls the deictic features of demonstratives, which position the referent with respect to the speaker. The suffixes encode three degrees of distance. Proximal distance is encoded by the suffix –hV, with the vowel undergoing regressive harmonization, just like the homophonous unpossessed marker –hV, and other suffixes with unspecified vowels. The referents of the proximal forms are on the whole within the speaker’s reach. The medial suffix –ra is formally identical to the suffix –ra, expressing counterexpectation, which is a possible source of the proximal–medial contrast. The medial forms are used to talk about entities that are not within the speaker’s reach, but still
part of the immediate surroundings. The distal suffix bears striking resemblance to
the causative suffix \(-kVtV\), and undergoes analogical regressive harmonization.
Distal forms are rarely used today, and refer to entities that are far away from the
speaker, way beyond the immediate surroundings. Both medial and distal forms also
combine with a suffix \(-ha\), the function of which is probably emphatic but this
remains uncertain at the moment (e.g., \(liraha\)). The proximal, medial, and distal
forms can also combine with the contrastive suffix \(-bo\) (e.g., \(lirabo\) ‘the other man’).
To the best of my knowledge, the forms do not take into account the distance of the
referent from the listener.

3.9.1.1 Demonstrative pronouns

Whether deictically specified or not, the demonstrative pronouns can be used both
pronominally and attributively. The former use is illustrated in (146), which was
uttered in response to a question about the history of Washabo village, in which
there are only a few Lokono speakers who know the history of the village.\(^{52}\)

\[(146) Neibe harha ôdon ma li ìhasaboka.\]

\[
\begin{align*}
\text{nei–} & \text{be} & \text{ha} & \text{ra} & \text{o} & \text{dō–}η & \text{ma} & \text{li} & \text{i} & \text{t} & \text{a–} & \text{sabō–ka} \\
3PL–COL & complete & die–NMLZ & but & DEM:M & know–CMPR–PFV
\end{align*}
\]

‘They all died, but he knows more.’

In (146), the subject of the second clause is expressed by the deictically unmarked
masculine demonstrative pronoun \(li\), referring to an elderly man who knows more
about the topic. The demonstrative pronoun was accompanied by a pointed gesture
toward the house of the man in question. In the first (stative) clause, on the other
hand, the free \(3^{rd}\) person plural pronoun \(nei\) combined with the collective suffix \(-be\)
encodes the subject. The collective suffix can presumably also attach to all three
demonstrative pronouns, although I have only attested it with the masculine and the
plural demonstrative pronouns \(libe\) and \(nabe\), respectively).

The attributive use of demonstratives is illustrated in (147) from the story in the
online Appendix IV. Here, the medial demonstratives are not used as spatial
expressions, but rather as means of reintroducing a backgrounded participant. In
such cases, they are not accompanied by a gesture.

\[(147) Torabo kasakabo diaro lirabo andathe.\]

\[
\begin{align*}
to & \text{–} & ra–bo & \text{kasakabo} & d'aro & li–ra–bo & \text{ând}=tʰe \\
\end{align*}
\]

‘Some other day the other man comes.’

In (147) the feminine medial demonstrative \(torabo\) functions as the modifier of the
noun \(kasakabo\) ‘day’. The phrase functions as an adverbial phrase encoding the time
of the event expressed by the predicate. Notice that another demonstrative (i.e.

\(^{52}\) The stative verb \(harhan\) ‘complete’ is one of the few stative verbs that does not require
a TAM marker to form a complete predicate
lirabo) expresses the subject of the clause. Both demonstratives contain the contrastive marker –bo, which creates the contrast between this male character and the day of his arrival, and the other male character in the story, who comes on a different day. The venitive enclitic =the, on the other hand, signals that the motion is oriented toward the deictic center, which in this case is the female protagonist in the story.

The demonstrative pronouns are also frequently used in what Diessel (1999) calls the identificational demonstrative context, which in Lokono is realized as an equative clause (§ 3.5.3). As discussed above, the nominal argument in such clauses can either follow the nominal predicate or be preposed for topicalization, as in (148). Example (148) was uttered by a Lokono woman who was weaving a cotton hammock, and introduced me to the different tools and materials she used. The demonstrative was accompanied by a gesture pointing at a basket with cotton cord.

(148)  *Tora to yaho.*

to–ra to yaho
DEM:F–MED DEM:F cotton
‘That is cotton.’

In (148) yaho ‘cotton’ functions as the predicate, the argument of which is expressed by the feminine medial demonstrative pronoun *tora*. The deictically unspecified demonstrative *to* in turn plays the role of the copula. The copula is often inserted if the combination of the argument and the predicate can be misunderstood as a single noun phrase. This would have been the case in (148): *tora yaho* ‘this cotton’. If such a misinterpretation is excluded by the word order of the constituents, the copula can be left out as in (149). Example (149) sums up the description of the creek called *Kakhalekoyaro* ‘one with crystals’. Here, the demonstrative pronoun is used anaphorically and is not accompanied by a gesture. The example includes the Lokono landscape term *onikhan* ‘creek’ (lit. ‘little rain’) and a complex nominalization *wakhaitho kho* ‘beautiful’ (lit. ‘not very bad’).

(149)  *Ja, wakhaitho kho onikhan tora.*

ya wakʰaː–i–ʃo=ʌnikʰan to–ra
‘Yes, (Kakhalekoyaro) is a beautiful creek (lit. ‘not a very bad small rain’).’

In (149) the nominal expression *wakhaitho kho onikhan* ‘a beautiful creek’ is a nominal predicate, the argument of which is expressed by the feminine medial demonstrative pronoun *tora*. Since the combination *onikhan tora* cannot be parsed as a single phrase, the copula is not necessary, and typically does not appear.

When functioning as the core arguments of the verb or as the argument in equative clauses, demonstrative pronouns can in principle refer to any entity, including people, objects, and landscape features, as exemplified in (147), (148), and (149), respectively. In directional phrases, on the other hand, demonstrative pronouns can modify the Ground-denoting noun or serve themselves as the Ground-denoting terms. The first situation is exemplified in (150), in which the feminine
distal demonstrative pronoun is used as the modifier of the Ground-denoting expression.

(150) Tokotabo orhorho diako, amadiaro maborhodonka.

to–kota–bo oɾoʔo d’ako amaɗaro ma–boɾoɗo–ŋ–ka

DEM–DIST–CNTR landform top nothing PRV–grow–NMLZ–PFV

‘On top of that other landform in the distance, nothing grows.’

The example comes from an elicitation, in which two speakers are describing drawings of landforms to each other (see § 4.3). In (150) the distal feminine demonstrative pronoun, combined with the contrastive suffix –bo, modifies the Ground-denoting noun horhorho ‘landform’. The Ground-denoting noun, in turn, is the possessor of the configurational noun diako ‘top’, forming a directional phrase encoding location. The configurational noun is unmarked for the location directionality (i.e. the where-marker is dropped).

Importantly for the discussion of the what/where distinction, when used as Ground-denoting expressions in the directional phrase—the locus of the distinction—demonstrative pronouns cannot combine with the where-marker –n. They are typically found either with the what-marker bithi or with a configurational noun. The latter situation is exemplified in (151), a description of the Event Triads stimulus, showing a ball rolling toward a wooden block (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(151) Thukheroswathe andun torabo âmun.

tʰi–kʰerosa=tʰe aŋdi–n to–ra–bo a.mɪŋ

3FA–roll.REFL=VEN arrive–NMLZ DEM–MED–CNTR COM.LOC.WHR

‘(A ball) rolled toward us arriving by the other (wooden block).’

In (151), the goal of motion is expressed by the directional phrase, with the complex directionality marker âmun, consisting of the phonologically reduced proximity configurational noun oma (i.e. the comitative marker) and the directionality marker –n. The Ground-denoting demonstrative referring to an object is thus first combined with a configurational noun, which in turn attaches the directional where-marker.

The difference in the referential scope of demonstrative pronouns as core arguments and Ground-denoting expressions is not surprising. Whether people, objects, or places, it is necessary for a language to have means of referring to entities in active, stative, and equative clauses, so that they can be identified or described. In the directional phrase, however, the entities are categorized as people and objects or as places by the location and goal directionality markers. If a demonstrative pronoun is used in the directional phrase, its referent must be compatible with the type of the referents encoded by nouns combining with the what-marker. If the demonstrative pronoun refers to a place (e.g., a landscape feature), its meaning is modulated by the what-marker. Such cases are discussed in the following chapters, in which I give examples of the combination of demonstrative pronouns referring to landscape features with the what-marker (chapter 4). In such cases the landform is typically construed as an object-like point on the map or far in the distance. More typically, places, if expressed by deictic forms, are encoded in the directional phrase by
demonstrative adverbs. Demonstrative adverbs, which specialize in referring to places, cannot, however, be used as the core arguments of the verb or as arguments in equative clauses.

### 3.9.1.2 Demonstrative adverbs

The set of demonstrative adverbs is defined by the same set of distance-encoding suffixes that form demonstrative pronouns. The morphosyntactic properties of demonstrative adverbs are, however, different. They cannot function as the core arguments of the verb, nor as the argument in equative clauses. They also do not function as modifiers. As such, demonstrative adverbs cannot be classified as nouns, although they pattern similarly to place-denoting nouns in the directional phrase. Demonstrative adverbs combine with directionality markers, functioning solely as modifiers of the predicate, expressing the source, location, or goal of the event, as in (152). The example comes from the same narrative about the history of Washabo cited above, and contains two borrowings from Dutch, the numeral *twalf* ‘twelve’ and the noun *jaar* ‘year’ in the dependent clause indicating the time of the event in the main clause.

(152) *Wakili, twalf jaar dankha, yâ danda kobathe.*

\[
\begin{array}{lllll}
\text{wakili} & \text{twalf} & \text{ya:r} & \text{d–ã–ŋ–k\textsuperscript{b}a} \\
\text{long.ago} & \text{twelve} & \text{year} & \text{1SG\textsubscript{A}–E,V–NMLZ–SIM} \\
\text{ya:} & \text{d–ãnda=koba=t} \text{e} \\
\text{LOC,DEM,PRX} & \text{1SG\textsubscript{A}–arrive=REM,PST=VEN} \\
\end{array}
\]

‘Long ago, when I was 12 years old, back then I came here.’

In the second clause of (152), the demonstrative adverb *yâ* encodes the goal of movement of the verb *andun* ‘arrive’. The venitive enclitic indicates that the movement is oriented toward the deictic center—Washabo village where the speaker lives now. The demonstrative adverb is unmarked for the location and goal directionality in (152). The demonstrative adverbs are in fact never marked in the telic location and goal directionality. However, when the event is atelic, the *where*-marker is used. I assume that the *where*-marker was dropped with demonstrative adverbs, just as it is optionally dropped with configurational nouns. The forms of the demonstrative adverb in the different directionalities are given in Table 36.
TABLE 36.
DEMONSTRATIVE ADVERBS AND DIRECTIONALITY MARKERS.

<table>
<thead>
<tr>
<th>Directionality</th>
<th>Proximal</th>
<th>Medial</th>
<th>Distal</th>
</tr>
</thead>
<tbody>
<tr>
<td>location and goal telic</td>
<td>yaha/yâ</td>
<td>yara</td>
<td>yakuta</td>
</tr>
<tr>
<td>location and goal atelic</td>
<td>yahanthero/yânthero</td>
<td>yaranro</td>
<td>yakanro</td>
</tr>
<tr>
<td>source telic</td>
<td>yahâya</td>
<td>yarâya</td>
<td>yakutâya</td>
</tr>
<tr>
<td>via</td>
<td>yahadi</td>
<td>yaradi</td>
<td>yakutadi</td>
</tr>
</tbody>
</table>

Worth pointing out is the fact that demonstrative adverbs do not combine with the atelic source marker, and that the atelic location and goal form of the proximal demonstrative is a complex lexicalized form that contains the venitive enclitic =the.

The proclivity of the demonstrative adverbs to appear in the directional phrase makes them frequent elements of stative locative clauses and the BLC. The directional expression—that is, the demonstrative itself in the case of the telic location and goal directionality—can be suffixed with the perfective marker, or any other TAM suffix, forming a stative clause, as in (153) from the story in the online Appendix IV, in which the speaker is calling out to check if there is anybody home.

(153) Yaraka bo?
    ya–ra–ka=bo
    LOC.DEM–MED–PFV=2SG$_R$
    ‘Are you there?’

Example (153) has the structure of the BLC; the raising intonation implies it is a question. The medial demonstrative adverb is suffixed with the perfective marker and there is no where-marker preceding it. Demonstrative adverbs are incompatible with the what-marker. Neither can they form any phrases with relational and configurational nouns. Their meaning renders them the prototypical place-denoting expressions. However, this function comes at a cost; such forms are so far removed from prototypical nouns encoding people and objects that they cannot be considered nominal, as reflected in their morphosyntactic distribution.

3.9.1.3 Presentative demonstrative

In Lokono there is also a presentative demonstrative hai, also realized as hei, similar to the French voilà or the Russian vot. Fillmore (1982:47) calls such demonstratives “sentential demonstratives”. As Diessel (1999:79) points out that they are characterized by a degree of syntactic independence that distinguishes them from demonstrative pronouns. The Lokono hai appears only in equative clauses, always in sentence-initial position, followed by a demonstrative pronoun, and an optional appositional noun phrase identifying the entity. Although structurally similar to an equative clause with demonstrative pronouns, the presentative construction has a different function. It not only serves to identify an entity referred to by the demonstrative pronoun by equating it with a juxtaposed noun phrase, but also to introduce the referent into the physical discourse space. The example below comes
from a traditional story about a young man who meets a girl by a creek. She takes him home and introduces him to her parents.

(154) *Hai lira dathi, hai tora dayo.*

<table>
<thead>
<tr>
<th>hai</th>
<th>li–ra</th>
<th>da–tsi</th>
<th>hai</th>
<th>to–ra</th>
<th>da–yo</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRES</td>
<td>DEM:M–MED</td>
<td>1SGA–father</td>
<td>PRES</td>
<td>DEM:F–MED</td>
<td>1SGA–mother</td>
</tr>
</tbody>
</table>

‘This is my father, this is my mother.’

The presentative is gender neutral; in (154) there are two presentative clauses, introducing the parents to addressee. In another version of the same story, the situation in (154) is expressed with an equative clause without the presentative demonstrative (i.e. *Lira li dathi, tora to dayo* ‘He is my father, she is my mother’). This alternative version is more felicitous when talking about the parents who are not participants in the speech-act, but are present somewhere in the background. It is worth noticing, however, that the appositional phrase identifying the referent is not obligatory. The presentative demonstrative forms a complete clause with the demonstrative pronoun. This is exemplified in (155), which is a useful sentence when handing something over to someone.

(155) *Hai tora.*

<table>
<thead>
<tr>
<th>hai</th>
<th>to–ra</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRES</td>
<td>DEM:F–MED</td>
</tr>
</tbody>
</table>

‘Here it is’.

The presentative construction above can also be extended with the venitive enclitic =*the*, which adds a motion dimension to it, as in (156).

(156) *Hai torathe.*

<table>
<thead>
<tr>
<th>hai</th>
<th>to–ra=tʰe</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRES</td>
<td>DEM:F–MED=VEN</td>
</tr>
</tbody>
</table>

‘Here it comes.’

In the three cases discussed above, the utterance is typically associated with a gesture, which makes it clear which entity is referred to by the demonstrative pronoun. The presentative demonstrative does not appear in directional phrases, therefore it cannot be classified with respect to the *what/where* distinction.

### 3.9.2 Reference tracking

Lokono has a number of forms that can be used to refer back to elements already mentioned in discourse. First of all, Lokono has a number of person forms discussed above, which help keep track of the referents. The restrictions on their use are summarized below, particularly with respect to the directional phrase (§ 3.9.2.1). Furthermore, there is a specialized locative anaphoric adverb *yo* referring back to places (§ 3.9.2.2). Finally, Lokono also boasts a discourse marker *kia*, referring back to any type of noun phrase and to larger portions of the text (§ 3.9.2.3).
3.9.2.1 Personal affixes and pronouns

In Lokono personal prefixes and enclitics are the most common way of keeping track of referents, as opposed to full noun phrases, which are typically used for introducing a new referent. Pronouns, on the other hand, including the demonstrative pronouns, are typically used for topicalization and, when combined with the contrastive or emphatic suffixes, for contrast and emphasis. This is a typical pattern for Arawakan languages, and it can be observed in the traditional story given in the online Appendix IV. The medial form of the demonstratives is typically used to indicate a referent that is somewhat unexpected, and not in the focus of attention at the moment. This is illustrated again in example (157), which also comes from the traditional story in Appendix IV.

(157) *Ma wakhaithi kho barhin lira […]*.  
\[
\begin{array}{lllllllllllllllllll}
\text{ma} & \text{wak}^b_a & \text{-i-} & \text{tʃi=k}^h_o & \text{baɾi-} & \text{-} & \text{li-ra} \\
\text{but} & \text{bad-VERI-SBJ.REL.M=NEG} & \text{though-NMLZ} & \text{DEM:M=MED} \\
\end{array}
\]

‘But he is a very good looking man though […]’

In (157), the speaker refers to the man she was just complaining about, contesting that nevertheless he is very pretty. Hence, the medial demonstrative pronoun is used. It is possible that such use of the medial demonstratives pronoun in *–ra* is linked to the counter-expectation suffix *–ra*. Noteworthy is the use of the form *barhin*, which functions as a concessive or frustrative marker.

With respect to the *what/where* distinction, it is worth reiterating that personal prefixes cannot combine with the *where*-marker, which is a suffix. This restriction is first of all of a formal nature, but interestingly the same restriction applies to free pronouns, which suggests a semantic conflict (notice that personal prefixes can combine with suffixes, e.g., the collective suffix). This extends also to demonstrative pronouns. As discussed above, demonstrative pronouns can refer to all kinds of entities when used as the core arguments of the verb. In the directional phrase, however, their meanings must be compatible with that of the *what*-marker *bithi*, which *de facto* limits their referents to people and objects.

3.9.2.2 Locative anaphoric adverb yo

The locative anaphoric adverb *yo* is used to refer back to places mentioned in discourse. It is interesting to notice that the locative anaphoric root contains the same root-formative consonant *y*—that forms the locative demonstrative adverb *ya* (§ 3.9.1.2). The anaphoric adverb is exemplified in (158), a sentence form a traditional story about a man who decides to live on his own in the forest.

(158) *To yon landun, lumarhita lubanabowa.*  
\[
\begin{array}{lllllllllllllllllll}
\text{to} & \text{yô-} & \text{l-} & \text{ánði-} & \text{li–maɾi} & \text{ta} & \text{li–banabo–wa} \\
\text{DEM:F} & \text{LOC:ANPH–LOC.WHR} & \text{3M} & \text{arrive–NMLZ} & \text{3M} & \text{make} & \text{3M} & \text{hut–REFL} \\
\end{array}
\]

‘After (his) arriving (in the forest), he made a hut.’
In (158) the locative anaphoric adverb combines with the directionality marker –n to refer back to the destination of movement—that is, the forest. The combination functions as an adverb to the event nominalization landun ‘his arriving’. The nominalization in turn functions as a dependent temporal clause, preposed with respect to the main clause, iconically encoding an event anterior to it.

As opposed to the demonstrative adverb the locative anaphoric adverb cannot appear on its own, it has to be followed by the directionality marker –n.

Interestingly, the adverb is one of the few forms in the language still occasionally attested with the non-reduced form of the directionality maker—namely, mun. That the combination of the locative anaphoric root and the directionality marker is lexicalized is clearly visible in the fact that the source and via markers do not substitute for the location and goal directionality marker –n, as is usually the case, but follow it. In (159) the speaker tells a story of the death of the chief of Cassipora, which happened when the speaker was working at the Kabo creek in the west of the country.

(159)  Yon wâya damikodathe diâha nabithiro.

\[\text{LOC:ANPH–LOC:WHR} \quad \text{SRC:TL} \quad 1SG_{AX} \text{send=VEN speak–UNPOSS} \quad 3PL_{AX} \text{~LOC:WHT–ATL}\]

‘From (Kabo), I sent a message to them’.

In (159) the speaker uses the locative anaphoric adverb to refer back to a location, from which he sent out messages to his home village. Even though the telic source directionality marker wâya is used, the location and goal directionality marker –n is present. The directionalities are normally incompatible, therefore I assume that yon is today a lexicalized form encoding a location previously mentioned in discourse, which stands unmarked in the location and goal directionality. The same applies to the via directionality marked by the suffix –di. In (160), the speaker tells us about the adventures of his youth, part of which was spent in the city. The via directionality signals that the activity was distributed through the Ground rather than focused in a specific location.

(160)  Yondi dabu da koba kiba.

\[\text{LOC:ANPH–LOC:WHR–VIA} \quad \text{standing} \quad 1SG_{AX} \text{~E.V=REM.PST as.well}\]

‘I stayed (in the city) for a while as well.’

In (160) the adverb dabu ‘staying’, which triggers an empty verb clause, encodes the semantic content of the predicate. The subject and TAM markers are found on the empty verb. Importantly, the distributive suffix follows the location and goal directionality marker, which again signals that the combination yon is lexicalized. The different combinations of the anaphoric locative adverb with the directionality markers are given in Table 37. For comparison, Table 37 also includes the forms of the locative demonstrative. The anaphoric adverb is incompatible with the what-marker, the atelic source marker, relational nouns, and configurational nouns.
Table 37. Directionality paradigm of the locative anaphoric adverb.

<table>
<thead>
<tr>
<th>Directionality</th>
<th>Locative anaphoric adverb</th>
<th>Demonstrative adverb (proximal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location/Goal telic</td>
<td>yon</td>
<td>yaha/yâ</td>
</tr>
<tr>
<td>Location/Goal atelic</td>
<td>yonro</td>
<td>yahanhero/yanthero</td>
</tr>
<tr>
<td>Source telic</td>
<td>yon wâya/yon waria</td>
<td>yahâya/yâya</td>
</tr>
<tr>
<td>Via</td>
<td>yondi</td>
<td>yahadi/yâdi</td>
</tr>
</tbody>
</table>

The combination *yon* may be a relatively recent lexicalization, as historical sources do not mention it, instead noting the expected form *juâria* “von dort her” [from there] (Schumann and Schumann 1882a). Similarly, according to Bennett (1989), in the Guyanese dialect, which is more conservative, *yo wâya* means ‘from there, from that place’. In my data *yo wâya*, however, is consistently used with a temporal rather than spatial meaning. It is not unlikely therefore that speakers introduced the locative element –n to distinguish the two uses.

(161) *Yo waria, ya damekheboka, Korhitin shirokonro.*

\[
\begin{array}{llll}
\text{LOC:ANPH} & \text{SRC:TL} & \text{LOC:DEM} & \text{1SG—work—PFV} \\
\text{ku} & \text{waria} & \text{ya} & \text{da—mek}^3 & \text{ebo—ka} \\
\text{Corentyne} & \text{headwater—LOC.WHR—ATL} & \\
\text{‘After that I worked here, toward the source of the Corentyne river’}
\end{array}
\]

In (161), the combination *yo waria* functions as a temporal expression; this is evidenced by the type of the predicate used in the clause, which does not involve motion, hence making the literal source reading impossible.

3.9.2.3 Discourse marker *kia*

Diessel (1999:101) does not distinguish a class of discourse demonstratives, treating them instead as one of the pragmatic uses of demonstratives. Within such pragmatic uses he does distinguish a discourse function, whereby a demonstrative is coreferential with a proposition, from the anaphoric use of demonstratives, in which a demonstrative is coreferential with a noun phrase, and from pure text deixis, whereby a demonstrative refers to “the material side of language” (Diessel 1999:101).

The Lokono marker *kia* clearly has such a discourse function. Formally, it is distinct from demonstratives and has no deictic qualities—that is, it cannot combine with the demonstrative suffixes encoding degrees of distance or contrast. Neither is it accompanied by a gesture. It can refer back to a proposition, but also to noun phrases referring to people, objects, and places. Example (162) comes form a narrative about the government not recognizing Amerindian titles to land. The problem is discussed in the preceding discourse, but is also mentioned again as a postposed negative nominalization.
(162) *Kia mika kho tatan wamun, horhorho mâmun wan.*

\[
\begin{array}{l}
\text{\(\text{kia}\quad \text{mî–k}^{\text{a}}\text{o}\quad \text{tæ–}\text{ŋ}\quad \text{wa–mîŋ}\)}
\end{array}
\]

\[
\begin{array}{l}
\text{DSC\quad \text{little–PFV=NEG}\quad \text{hard–NMLZ}\quad \text{1PLA–DAT}}
\end{array}
\]

\[
\begin{array}{l}
\text{\(\text{hoŋrō\quad m–a.mîŋ\quad w–\ddot{a}–}\text{ŋ}\))}
\end{array}
\]

\[
\begin{array}{l}
\text{landform\quad PRV–have\quad 1PLA–E.V–NMLZ}
\end{array}
\]

‘That is very hard for us, not to have a land.’

In (162) the main clause has a semantically complex structure of litotes—a relatively common strategy in Lokono. The stative verb *min* ‘little’ is combined with the perfective marker –*ka*, only to be followed by the negation enclitic =*kho*, which reverts the meaning from ‘little’ to ‘very big’. The subject is expressed by the preposed discourse marker *kia*, and elaborated upon in the following postposed nominalization.

In (163), in turn, the discourse marker *kia* refers to the referent of a noun phrase. The example comes form a narration of the biblical story about a poor widow, who is introduced in the preceding fragment, and referred back to with the discourse marker.

(163) *Kia shika bianbe khan karokoli tholoko.*

\[
\begin{array}{l}
\text{\(\text{kia}\quad \text{ʃ}^{\text{ika}}\text{biãm–be=k}^{\text{a}}\text{ŋ}\text{karokuli\ t}^{\text{b}}\text{o–loko}\)}
\end{array}
\]

\[
\begin{array}{l}
\text{DSC\quad \text{put\ two–COL–DIM\ gold\ 3F-A–inside}}
\end{array}
\]

‘(The poor widow) puts two coins in (the charity box).’

Interestingly, the discourse marker can also be used attributively. Example (68), discussed earlier, and given below as (164) demonstrates this use.

(164) *Ken kia hiyaro, bikidoliatho tora.*

\[
\begin{array}{l}
\text{\(\text{k}^{\text{ə}ŋ}\text{\ kia\ hiyaro\ bikido–lia–t}^{\text{b}}\text{o\ to–ra\ and\ DSC,DEM\ woman\ raise.REFL–INCH–REL:F\ DEM:F–MED}}
\end{array}
\]

‘And this girl, she was a young (lady).’

Finally, let us notice that the discourse marker can also be used to refer back to places, as in example (165), which comes form a description of *Urhikoro*, a creek in the Cassipora territory, which is a popular tourist attraction.

(165) *Kia to yonkoro, ani, baninima, ani, timun.*

\[
\begin{array}{l}
\text{\(\text{kia\ to\ yō–}\text{ŋ–koro}\)}
\end{array}
\]

\[
\begin{array}{l}
\text{DSC\ DEM:F\ LOC.ANPH–LOC.WHR–SPEC:F}
\end{array}
\]

\[
\begin{array}{l}
\text{\(\text{b–ani–ŋ–i–ma\ t}^{\text{im}–\text{ŋ}}\)}
\end{array}
\]

\[
\begin{array}{l}
\text{2SG–do–NMLZ–EP–ABIL\ I\ swim–NMLZ}
\end{array}
\]

‘(Urhikoro) is the very place where you, um, can, um, swim.’

Example (165) is an equative clause with the feminine demonstrative functioning as the copula, in which the discourse marker is the argument of a complex predicate that follows. The predicate contains the locative anaphoric adverb *yo*, suffixed with
the directionality marker –n indicating a location, and nominalized with the feminine specificity marker –koro. The following event nominalization specifies what type of a place it is. The speaker, who is not fluent in Lokono, first uses the general verb ani ‘do’, while trying to remember the right content verb—that is, timun ‘swim’.

As Diessel (1999:125) points out, because the function of such demonstratives is often to connect different parts of discourse, they may give rise to sentence connectives. This is in keeping with the Lokono data, in which a number of fairly fixed expressions with kia exist that could be classified as sentence connectives.

<table>
<thead>
<tr>
<th>Connector</th>
<th>Meaning</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>kia doma</td>
<td>therefore</td>
<td>doma ‘reason’</td>
</tr>
<tr>
<td>kia bena</td>
<td>after that</td>
<td>bena ‘after’</td>
</tr>
<tr>
<td>kia loko</td>
<td>in that situation</td>
<td>loko ‘inside’</td>
</tr>
<tr>
<td>kia diki</td>
<td>after that</td>
<td>diki ‘footprint’</td>
</tr>
<tr>
<td>kia abo</td>
<td>with that</td>
<td>abo ‘INSTR’</td>
</tr>
</tbody>
</table>

In sum, the discourse marker kia is used to refer back to both noun phrases and larger portions of discourse. It is insensitive to the what/where distinction in that it can refer back to both nouns denoting people, objects, and places. Neither is the form kia specified for person or number, as opposed to the personal prefixes.
3.10 Motion

The linguistic means of expressing spatial constellations discussed so far were framed as stative clauses (Basic Locative Construction), empty verb clauses (Posture Construction), and equative clauses (Locative Equation). All three types of constructions are used to encode static spatial scenes. Dynamic events, on the other hand, are expressed predominantly as active clauses; usually active clauses in which the verb encoding motion functions as the predicate, although motion semantics can be also imparted by the associated motion markers attached to other types of predicates. In this section, I first give a general description of the structure of active clauses used to encode motion events (§ 3.10.1). Second, I provide an overview of the motion verb lexicon, discussing its semantic richness, which is particularly enhanced by a number of productive derivational processes (§ 3.10.2). Third, I discuss two basic motion verbs that are often thought of as central elements of the motion verb inventory—that is, the verbs ôsun ‘go’ and andun ‘arrive’, the closest Lokono equivalents of the English deictically oriented verbs come and go (§ 3.10.3). Subsequently, I look at two verbs, kodonon ‘enter containment’ and fotikidin ‘enter non-containment’, which contrast with their English equivalents enter and exit in that they lexicalize the type of the resultant spatial configuration rather than the direction of motion. As such the two verbs give us an insight into the semantics of some landscape terms (3.10.4). I then turn to two markers of associated motion, the venitive =the and the andative –ba, the function of which is to orient the motion encoded by the verb with respect to the deictic center (§§ 3.10.5 and 3.10.6, respectively).

3.10.1 General features of clauses encoding motion

The analysis presented so far is of importance to the discussion of the linguistic encoding of motion events. The directional phrase—the central element of the BLC and the LE—can also function as an adverbial phrase encoding the directionality of the event encoded by active verbs. In fact, as described above, the two directionality markers, the what-marker bithi and the where-marker –n, collapse the distinction between the static location directionality and the dynamic goal directionality. On the level of the clause, the type of the predicate disambiguates the two. A predicate encoding a motion event implies that the directional phrase expresses the goal of motion, while a predicate encoding a static event implies the location reading. The same logic applies to the via marker. The use of directional phrases in stative and equative clause was illustrated with numerous examples in previous sections. The use of the directional phrases in active clauses is exemplified in (166), which comes from a post factum description of a fieldwalk through the Cassipora area.

(166) *Kia wâya wakonâkathe ya, washikwanro.*

`DSC SRC TL 1PLA- walk-PFV= VEN LOC DEM 1PLA- house.POSS= LOC WHR= ATL`

‘From (the savanna) we walked here, toward our home.’
In (166), the source of movement is expressed by a directional phrase with the discourse marker kia, referring to a nearby savanna mentioned earlier, combined with the telic source marker. The goal of movement is encoded by two directional phrases. First the deictically unmarked demonstrative adverb appears in its telic form—that is, unmarked by the directionality marker –n—encoding the present location of the speaker. The second directional phrase is marked with the where-marker –n and the atelic suffix –ro. Since the predicate contains the motion verb konan ‘walk’, additionally marked with the venitive enclitic =the, the two directional phrases can only be interpreted as encoding the goal of movement. Although the source and goal directionality are distinguished from each other by their respective markers, it is worth noting that the word order of the constituents iconically strengthens their meanings. Source directional phrases typically precede the predicate and goal directional phrases follow it.

The discussion of the distribution of the information about the path and manner of motion among the elements of an active clause à la Talmy (1985; 2000) is beyond the scope of this chapter. As a general guideline, however, it can be summed up that the spatial configuration (e.g., containment) and the directionality (e.g., goal) are encoded in the directional phrase. As such most Lokono motion verbs can be classified as satellite-framed, as opposed to, for instance, Spanish verbs salir ‘exit’ and entrar ‘enter’, which lexicalize a directionality component (Talmy 1985; 2000). However, there are counterexamples to this general rule, such as the transitive verb âmun tun ‘approach’, derived from the complex directionality marker âmun with the verbalizing suffix –tV, which encodes the goal directionality.

More important for the discussion of the structure of active clauses with motion verbs is the common use of event nominalizations. A nominalized verb can appear following the main motion verb. Such nominalizations function as adverbial clauses. Any motion verb can be used as the main predicate. The function of such adverbial clauses depends, however, on the type of the nominalized verb. If the nominalized verb is either the verb ôsun ‘go’ or andun ‘arrive’, the adverbial clause functions as an adverbial of manner. Since these verbs encode only deictic information, they are the de facto expressions of the direction of motion. This is exemplified in (167) taken from the recording of an elicitation session based the Event Triads stimulus, showing a ball rolling away from the speaker (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(167) Thukheroswa ôsun.
\[ t^{3}_{A}\text{-roll}, \text{REFL} \quad \text{o-si-ŋ} \\]
\[ 3\text{F} \quad \text{REFL} \text{go-NMLZ} \]
‘It rolled away.’

In (167), the nominalized verb ôsun ‘go’, although in fact deictically unspecified, is interpreted as translocative in contrast to the cislocative verb andun ‘arrive’ (§ 3.10.3). The nominalization serves here merely to encode the direction of motion with respect to the deictic center, which can alternatively be achieved by the addition of the markers of associated motion (§ 3.10.5). Importantly, apart from the verb andun ‘arrive’, and the verb ôsun ‘go’, which is often interpreted as translocative, there are no verbs that lexicalize the deictic orientation of movement.
The other possibility is for the nominalized verb to encode an activity other than arriving and going, in which case the adverbial clause receives either a manner or a purposive reading. The former situation is exemplified in (168), which comes form the description of the parades of the Lokono social club Wayonon in Paramaribo.

(168) *Yon wôsa jádun to waboroko lokhodibe.*

\[\text{yô–n} \ w–o:sa \ \text{ya:di–n} \ \text{to} \ \text{waboroko} \ \text{lok}^{3} \text{–dī–be}\]


‘There we go wandering through the streets (i.e. performing as a parade).’

In (168), the motion verb *jádun* ‘wander’ is used to express the idea of parading in the streets. It appears in its nominalized form, following the main predicate expressed by the verb *ôsun* ‘go’. The nominalization encodes an activity that is simultaneous with that expressed by the main predicate, thereby specifying the manner of movement. However, the adverbial clause could also be interpreted as purposive, if the context supports such an analysis. The purposive meaning is more pronounced if the atelic marker –ro is added to the nominalization, as in example (169) below. The utterance comes form a narrative about the utility of the dugout canoes for the Lokono people.

(169) *Wôsa kabuyanro tholoko, wôsa yarhidanro tholoko, wôsa yokhanro tholoko.*

\[\text{w–o:sa} \ \text{ka} \text{biyâ–n–ro} \ \text{to} \ \text{tô–loko}\]

1PL:–go field–LOC:WHR–ATL 3F:–inside

\[\text{w–o:sa} \ \text{yarhi–dâ–n–ro} \ \text{to} \ \text{tô–loko}\]

1PL:–go liana–vbr:intrv–NMLZ–atl 3F:–inside

\[\text{w–o:sa} \ \text{yok}^{3} \text{–n–ro} \ \text{to} \ \text{tô–loko}\]

1PL:–go shoot:intrv–NMLZ–ATL 3F:–inside

‘We go to the field in it, we go catching fish with poison in it, we go hunting in it.

In the last two clauses of (169), the nominalizations of verbs that do not encode motion appear suffixed with the atelic marker –ro. The respective verbs encode activities that are not performed in the dugout itself. The introversive verb *yarhidan* is derived from the nominal root *hayarhi*, a type of liana (*Lonchocarpus martynii*), the sap of which is used to temporally paralyze fish. The activity encoded by the verb *yarhidan* requires the damming of a watercourse and soaking the liana in the water. The dugout canoe is used in order to reach areas where such activities as *yarhidan* ‘catch with poison’ or *yokhan* ‘hunt’ can be performed. In this case, the two nominalizations encode a purpose of movement rather than the manner thereof. If confusion between the two interpretations needs to be avoided, the transformative suffix –bia can be used instead of the atelic –ro, signaling a purely purposive reading.

As a side note, it is worth noticing the parallelism in structure between the directional phrase *kabuyanro* ‘toward the field’ and the adverbial phrases *yarhidanro* ‘to catch fish with poison’ and *yokhanro* ‘to hunt’. It remains an open
question whether the two forms, the where-marker –n and the event nominalizer –n
have a common origin—that is, the dative marker. Interestingly too, in the Guyanese
dialect, the what-marker bithi is also found in combination with nominalized verbs,
encoding the purpose of motion. The difference between such purposive clauses
with the what-marker and the event nominalizer is not yet clear.

3.10.2 Motion verb lexicon

Lokono has a number of verbs encoding spontaneous motion, a sample of which is
given in Table 39 below. Semantically, these verbs range from those with a very
general meaning to those encoding specific information about the motion event. The
verb òsun ‘go’, for instance, is unspecified with respect to the deictic orientation,
manner and medium through which the movement takes place. It also does not
specify the type of Figure engaged in the movement. The verb andun ‘arrive’ differs
from it in that it is a deictically specified cislocative verb. The verbs kodonon and
fotikidin, in turn, encode the type of the resultant spatial configuration, which in the
former case must be a type of containment, while in the latter case a type of non-
containment. There are also five verbs encoding spontaneous motion along the
vertical dimension: the simplex verbs mudun ‘ascend’ and thokodon ‘descend’, their
complex synonyms ayomuntwan and onabontwan, respectively, and the verb tikidin
‘fall’ which encodes lack of control on the part of the Figure.

A few verbs encode information about the type of path. The synonymous verbs
fakutun and balin are used when the Figure passes in the vicinity of the Ground;
they typically combine with the directional phrases marked by the via directionality
marker –di. The reflexive verb koyonon ‘go home’ lexicalizes a return path,
typically if not exclusively toward one’s home. It can be contrasted with the verb
shiftidan ‘turn back’, which does not necessarily imply home as the goal of
movement. The verb khösun ‘go around’ implies a semi-circular path, while the verb
timan ‘cross’ encodes a path that is transversal with respect to the Ground.

Moreover, there are a few verbs encoding the medium of motion, including the
verb morodon ‘fly’ and verbs specifically related to water—that is, timun ‘swim’
used with all types of referents except for fish, and konon ‘swim (of fish)’, which is
the only verb specifying the type of Figure. In this group, I also include the verb
tobadonon ‘immerse oneself’ encoding movement resulting in containment by a
liquid Ground, māshidwan ‘dive’, maladun ‘be carried by water current’, and
nākonon ‘move by paddling’, which also encodes the instrument used (i.e. nahale
‘paddle’).

The speed of movement is encoded by two verbs, the simplex form darhidin
‘move quickly’ and the verb basadadwan ‘move slowly’ derived from the stative
verb basadan ‘slow’. Other manner distinctions encoded in the motion lexicon
<table>
<thead>
<tr>
<th>Type</th>
<th>Verb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>come/go</td>
<td>ôsun</td>
<td>go (deictically unspecified)</td>
</tr>
<tr>
<td></td>
<td>andun</td>
<td>arrive ( cislocative)</td>
</tr>
<tr>
<td>enter/ exit</td>
<td>kodonon</td>
<td>enter containment</td>
</tr>
<tr>
<td></td>
<td>fotikidin</td>
<td>enter non-containment</td>
</tr>
<tr>
<td>vertical dimension</td>
<td>mudun</td>
<td>ascend</td>
</tr>
<tr>
<td></td>
<td>thokodon</td>
<td>descend</td>
</tr>
<tr>
<td></td>
<td>tikidin</td>
<td>fall</td>
</tr>
<tr>
<td></td>
<td>onabontwan</td>
<td>ascend</td>
</tr>
<tr>
<td></td>
<td>ayomuntwan</td>
<td>descend</td>
</tr>
<tr>
<td>type of path</td>
<td>fakutun/balin</td>
<td>pass(^{\text{53}})</td>
</tr>
<tr>
<td></td>
<td>kayonon</td>
<td>go home</td>
</tr>
<tr>
<td></td>
<td>shifudan</td>
<td>turn back</td>
</tr>
<tr>
<td></td>
<td>khôsun</td>
<td>go around</td>
</tr>
<tr>
<td></td>
<td>timan</td>
<td>cross</td>
</tr>
<tr>
<td>medium of motion</td>
<td>morodon</td>
<td>fly</td>
</tr>
<tr>
<td></td>
<td>timun</td>
<td>swim (all but fish)</td>
</tr>
<tr>
<td></td>
<td>konon</td>
<td>move in water (fish only)</td>
</tr>
<tr>
<td></td>
<td>tobadonon</td>
<td>immerse oneself in liquid</td>
</tr>
<tr>
<td></td>
<td>maladun</td>
<td>be carried by water current</td>
</tr>
<tr>
<td></td>
<td>nákonon</td>
<td>move by paddling</td>
</tr>
<tr>
<td></td>
<td>môshidwan</td>
<td>dive</td>
</tr>
<tr>
<td>speed of motion</td>
<td>darhidin</td>
<td>move quickly</td>
</tr>
<tr>
<td></td>
<td>basadadwan</td>
<td>move slowly</td>
</tr>
<tr>
<td>manner of motion</td>
<td>dûdun</td>
<td>jump</td>
</tr>
<tr>
<td></td>
<td>konan</td>
<td>walk</td>
</tr>
<tr>
<td></td>
<td>irhibisonon</td>
<td>roll along the horizontal axis</td>
</tr>
<tr>
<td></td>
<td>khêrosoron</td>
<td>roll along the vertical axis</td>
</tr>
<tr>
<td></td>
<td>sorhidonon</td>
<td>move by cutting a path</td>
</tr>
<tr>
<td></td>
<td>rhwadun</td>
<td>crawl on all fours</td>
</tr>
<tr>
<td>distance between Figure and Ground</td>
<td>âmunton</td>
<td>approach (something)</td>
</tr>
<tr>
<td></td>
<td>âmuntonon</td>
<td>move oneself closer</td>
</tr>
<tr>
<td></td>
<td>táttonon</td>
<td>move oneself away from</td>
</tr>
<tr>
<td>reason behind motion</td>
<td>yarodon</td>
<td>migrate</td>
</tr>
<tr>
<td></td>
<td>yarodonon</td>
<td>migrate (of fish)</td>
</tr>
<tr>
<td></td>
<td>tudun</td>
<td>run away from danger</td>
</tr>
<tr>
<td></td>
<td>rarakhonon</td>
<td>move oneself out of the way</td>
</tr>
<tr>
<td></td>
<td>yâdun</td>
<td>travel</td>
</tr>
<tr>
<td></td>
<td>yâdwan</td>
<td>wander with purpose</td>
</tr>
<tr>
<td></td>
<td>bunan</td>
<td>follow a trace of an animal</td>
</tr>
</tbody>
</table>

\(^{\text{53}}\) I am not aware of any semantic differences between the two verbs fakutun and balin, both meaning ‘pass’, as well as between verbs derived from them given in tables below.
include crawling on all fours (rhawdun), walking on two feet (konan), jumping (dûdun), and two verbs for rolling differing in the axis around which the rotation takes place (irhibisonon ‘roll oneself around the horizontal axis’ and khêrosonon ‘roll oneself around the vertical axis’). There is also a landscape related motion verb sorhidonon ‘move through the forest by cutting a path with a machete’, derived from the landscape term sorhi ‘temporary path’.

In addition, there are three verbs lexicalizing the distance between the Figure and the Ground—namely, the related verb âmuntonon ‘move oneself closer’, and their antonym tatonon ‘move oneself away from’. Finally, there are a few verbs that encode the reason why movement takes place, including two verbs that encode migratory movements, yarodon and tudun, of which the former is used when movement is voluntary while the latter when the movement is caused by imminent danger. A related reflexive verb yarodonon encodes the seasonal migration of fish. The reflexive verb rurukhonon ‘move oneself’ implies that the Figure is obstructing someone or something. Finally, the verb yâdwan ‘wander with purpose’ typically describes hunting or fishing trips, which are normally not planned with a certain goal in mind (i.e. game or fish), but thought of as walks through the forest during which one may come across useful resources. Related to this verb is also the form yâdun ‘travel’. Finally, in the list I also included the verb bunan meaning ‘follow the traces of an animal’. A word of caution, however, would be appropriate here. In certain cases—for instance, sorhidonon, timun, and bunan—I was unable to ascertain if the verbs indeed encode a motion element or merely name an activity.

Table 39, however, does not do justice to the semantic richness of the Lokono lexicon, which is significantly enhanced by the morphological complexity of the verbal domain. Although a detailed description of the derivational processes pertaining to motion verbs is beyond the scope of this thesis, a few general remarks are in place. First of all, as discussed in earlier sections, active verbs are divided into four subclasses defined by the paradigms of their root-final vowels. The subclasses have their own general semantic profiles, which are echoed in the meaning of the individual verbs. This phenomenon is best discussed in the domain of motion verbs by comparing verbs of spontaneous motion with the verbs of caused motion, a sample of which is given in Table 40.

Lokono has two general verbs of caused motion shikin ‘put, give’ and nukun ‘take’, and a number of specific verbs such as sonkon ‘pour’, lakadun ‘scatter’, burhedun ‘throw’, rubutun ‘pull’, and fitin ‘paste’. All such verbs belong to the subclass I of active verbs—that is, they end in a vowel other than /a/ in their nominalized form and are typically transitive. Such verbs of caused motion have, however, also introversive equivalents in subclass II ending in the vowel /a/ in the nominalized form, for instance, rurukhan ‘move things out of the way’, which is an intransitive verb of caused motion backgrounding the object. Many of the verbs in Table 39 and Table 40 have such introversive equivalents, for instance, mudun ‘ascend (something)’ and mudan ‘ascend’, thokodon ‘descend (something)’ and thokodan ‘descend’. Such parallel forms also include the verbs timun ‘swim’, and its introversive equivalent timan ‘cross’, the meaning of which has been broadened to include transversal movement with respect to any Ground. In certain cases, the
relationship between the verbs of subclass I and II is not fully transparent today. It is nevertheless tempting to analyze the verbs *konon* ‘leak’, which is also used to encode the movement of fish in water as a subclass I equivalent of *konan* ‘walk’.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>shikin</td>
<td>put, give (something)</td>
</tr>
<tr>
<td>nukun</td>
<td>take (something)</td>
</tr>
<tr>
<td>irhibishin</td>
<td>roll (something) along the horizontal axis</td>
</tr>
<tr>
<td>shifudun</td>
<td>turn (something) around</td>
</tr>
<tr>
<td>ayomuntun</td>
<td>put (something) high</td>
</tr>
<tr>
<td>rurukhun</td>
<td>move (something)</td>
</tr>
<tr>
<td>sonkon</td>
<td>pour (something)</td>
</tr>
<tr>
<td>lakadun</td>
<td>scatter (something)</td>
</tr>
<tr>
<td>burkedin</td>
<td>throw (something)</td>
</tr>
<tr>
<td>fotikitin</td>
<td>bring (something) out of containment</td>
</tr>
<tr>
<td>rubutun</td>
<td>pull (something) out</td>
</tr>
<tr>
<td>khoroton</td>
<td>put (something) into tight containment (synonym of <em>shishin</em>)</td>
</tr>
<tr>
<td>shishin</td>
<td>put (something) into tight containment (synonym of <em>khoroton</em>)</td>
</tr>
<tr>
<td>kherôsun</td>
<td>turn (something) along the vertical axis</td>
</tr>
<tr>
<td>fitin</td>
<td>paste, pluck (something)</td>
</tr>
</tbody>
</table>

Other verbs of caused motion have equivalents in subclass III, which ends in the vowel /o/ and has a special event nominalizer –*non*. These verbs have, in turn, a reflexive meaning, for instance, *rurukhonon* ‘move oneself out of the way’, *irhibisonon* ‘roll oneself along the horizontal axis’, and *khêrononon* ‘roll oneself along the vertical axis’, which were listed in Table 39 as verbs of spontaneous motion. The analysis is more dubious in cases such as the reflexive *kodonon* ‘enter containment’, which may be related to the transitive verb *kodon* ‘weave’, but generally speaking all reflexive verbs in Table 39 can be traced back to a subclass I verb. The only exception is the verb *koyonon* ‘go home’, which is a fully unanalyzable reflexive verb. Interestingly, many verbs encoding the activity resulting in a certain posture of the human body are also reflexive, for instance, *teberedonon* ‘sit down on the ground’.

Finally, there are a few verbs from subclass IV, which are typically idiosyncratic cases, but in the case of motion verbs are fairly transparent. These include *yâdwan* ‘wander with purpose’, related to the verb *yâdan* ‘travel’, and possibly to the verb *yâdan* ‘harvest’, as well as the verbs *basadadwan* ‘move slowly’, *onabontwan* ‘descend’, and *ayomuntwan* ‘ascend’, which are all subclass IV verbs derived with the verbalizer –*dV*, from respectively, the stative verb *basadan* ‘slow’, and the directional phrases *onabon* ‘at the ground’ and *ayomun* ‘high’. A few forms that belong to either subclass III (reflexive verbs) or subclass IV (typically introspective reflexive verbs) encode carefulness on the part of the Figure, for instance, *kodwan* ‘enter containment carefully’, *fotikidonon* ‘enter non-containment carefully’, and *fotifotidwan* ‘enter non-containment carefully one after another.’ Last but not least,
the verb of spontaneous motion *fotikidin* ‘enter non-containment’ shares the element *fotik* with the verb of caused motion *fotikitin* ‘bring into non-containment’. The former verb may be derived with the verbalizer *–dV* and the latter with the causative suffix *–kVtV*, which with bases that have the consonant /k/ in the last syllable has the shorter form *–tV*.

Summing up, it has to be kept in mind that the verbs in Table 39 and Table 40 have equivalents in other subclasses of active verbs, the meaning of which may, but does not have to, involve motion. Eliciting such related forms is extremely difficult as their use is very context dependent. If asked directly the speakers can easily discard certain forms as ungrammatical if the right context is not provided. All the forms listed above have been attested in the corpus of texts, and have not been elicited directly.

If this vast motion vocabulary were not enough, in Lokono there are also a number of other highly productive derivational processes that can further enrich the expression of motion (§ 3.4.3). First, the Lokono motion verbs, similarly to many other Lokono verbs, can be intensified with the suffix *–bo*. The attested intensified verbs of spontaneous motion are listed in Table 41.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
<th>Intensified</th>
</tr>
</thead>
<tbody>
<tr>
<td>ôsun</td>
<td>go</td>
<td>ôsâbon, haste, do something quickly</td>
</tr>
<tr>
<td>andun</td>
<td>arrive</td>
<td>andâbon, arrive with pleasure</td>
</tr>
<tr>
<td>kodonon</td>
<td>enter containment</td>
<td>kodâbon, enter deeply</td>
</tr>
<tr>
<td>fotikidin</td>
<td>enter non-containment</td>
<td>fotikidâbon, exit more outside</td>
</tr>
<tr>
<td>mudun</td>
<td>ascend</td>
<td>mudâbon, move up quickly</td>
</tr>
<tr>
<td>thokodon</td>
<td>descend</td>
<td>thokodâbon, move down quickly</td>
</tr>
<tr>
<td>tiki</td>
<td>fall</td>
<td>tiki, fall intensively</td>
</tr>
<tr>
<td>fakutu</td>
<td>pass</td>
<td>fakutâbon, pass in many directions</td>
</tr>
<tr>
<td>balin</td>
<td>pass</td>
<td>balikâbon, pass in many directions</td>
</tr>
<tr>
<td>koyonon</td>
<td>go home</td>
<td>koywâbon, go home for real</td>
</tr>
<tr>
<td>khôsun</td>
<td>go around</td>
<td>khôswâbon, make a big detour</td>
</tr>
<tr>
<td>morodon</td>
<td>fly</td>
<td>morodâbon, fly like crazy, back and forth</td>
</tr>
<tr>
<td>timon</td>
<td>swim</td>
<td>timâbon, swim back and forth</td>
</tr>
<tr>
<td>tobadonon</td>
<td>immerse oneself</td>
<td>tobadwâbon, immerse oneself deeper</td>
</tr>
<tr>
<td>darhidin</td>
<td>move quickly</td>
<td>darhidâbon, run like crazy, back and forth</td>
</tr>
<tr>
<td>diûdon</td>
<td>jump</td>
<td>diûdâbon, jump intensively</td>
</tr>
<tr>
<td>konan</td>
<td>walk</td>
<td>konâbon, walk intensively, march</td>
</tr>
<tr>
<td>tudon</td>
<td>run away</td>
<td>tudâbon, escape for a long time</td>
</tr>
<tr>
<td>rurukkonon</td>
<td>move oneself</td>
<td>rurukhâbon, move oneself a lot</td>
</tr>
</tbody>
</table>

The addition of the intensifier has various semantic effects, depending on the meaning of the verb. The verb ôsun ‘go’, for instance, loses the motion element of its semantics, becoming a verb that encodes manner only (ôsâbon ‘haste’). The intensified verb andâbon, on the other hand, is translated by the speakers as ‘arrive with pleasure’, which is probably a pragmatic consequence of ‘arrive completely’.
Other intensified verbs encode motion events that are in a more advanced stage than that encoded by the non-intensified form, for instance, *kodwâbon* 'enter further into containment'. Verbs that do not encode a configuration or path, such as *darhidin* ‘run’, when intensified, signal that the motion is distributed in many directions, and were often translated with the addition of ‘back and forth’ or ‘like crazy’. Quite likely verbs of caused motion can also be intensified but I have not explored such forms.

Verbs of spontaneous motion can also be reduplicated, a process that has a more regular semantic pattern, indicating that the activity is performed many times. The attested reduplicated verbs of spontaneous motion are given in Table 42.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
<th>Verb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ôsun</td>
<td>go</td>
<td>ôsosâdun</td>
<td>go repeatedly</td>
</tr>
<tr>
<td>andun</td>
<td>arrive</td>
<td>andandadun</td>
<td>arrive repeatedly</td>
</tr>
<tr>
<td>kodonon</td>
<td>enter contain.</td>
<td>kodwakodwadun</td>
<td>enter containment repeatedly</td>
</tr>
<tr>
<td>fotikidin</td>
<td>enter non-contain.</td>
<td>fotikifotikidin</td>
<td>enter non-contain. repeatedly</td>
</tr>
<tr>
<td>fotikidin</td>
<td>enter non-contain.</td>
<td>fotifotidwan</td>
<td>enter non-contain. carefully</td>
</tr>
<tr>
<td>mudun</td>
<td>move up</td>
<td>mudamudadun</td>
<td>move up repeatedly</td>
</tr>
<tr>
<td>thokodon</td>
<td>move down</td>
<td>thokothokodon</td>
<td>move down repeatedly</td>
</tr>
<tr>
<td>tikidin</td>
<td>fall</td>
<td>tikitikidin</td>
<td>fall repeatedly</td>
</tr>
<tr>
<td>fakutun</td>
<td>pass</td>
<td>fakufakudun</td>
<td>pass repeatedly</td>
</tr>
<tr>
<td>balin</td>
<td>pass</td>
<td>balibalidin</td>
<td>pass repeatedly</td>
</tr>
<tr>
<td>koyonon</td>
<td>go home</td>
<td>koywakoywadun</td>
<td>go home repeatedly</td>
</tr>
<tr>
<td>khôsun</td>
<td>go around</td>
<td>khowkhowdun</td>
<td>go around repeatedly</td>
</tr>
<tr>
<td>timan</td>
<td>cross</td>
<td>timattimadun</td>
<td>cross repeatedly</td>
</tr>
<tr>
<td>morodon</td>
<td>fly</td>
<td>moromorodon</td>
<td>fly repeatedly</td>
</tr>
<tr>
<td>timun</td>
<td>swim</td>
<td>timittimidin</td>
<td>swim repeatedly</td>
</tr>
<tr>
<td>darhidin</td>
<td>move quickly</td>
<td>darbidarhidin</td>
<td>move quickly repeatedly</td>
</tr>
<tr>
<td>konan</td>
<td>walk</td>
<td>konakonadun</td>
<td>walk repeatedly</td>
</tr>
<tr>
<td>rhwadun</td>
<td>crawl</td>
<td>rhwarhwadun</td>
<td>crawl repeatedly</td>
</tr>
<tr>
<td>tudun</td>
<td>run away</td>
<td>tudatudadan</td>
<td>run away repeatedly</td>
</tr>
<tr>
<td>yâdwan</td>
<td>wander</td>
<td>yâyâdun</td>
<td>wander repeatedly</td>
</tr>
</tbody>
</table>

Just as in the previous case, I have not looked at the verbs of caused motion, but the productivity of the pattern suggests that they can be reduplicated as well. Although the pattern is fairly regular, there are also a number of forms that are somewhat idiosyncratic, for instance, *fotifotidwan* ‘enter non-containment carefully one after another’, which is a reduplicated verb, related to the verb *fotikidin* ‘enter non-containment’. In this case, not only is the reduplicated form irregular (i.e. missing the element –*ki*), but instead of encoding an iterative activity in which the same Figure is involved, it encodes the collectivity of the Figure. Apart from this irregular formation, there is also the perfectly regular verb *fotifikifotikidin* ‘enter non-containment repeatedly’.
Finally, most verbs can also be suffixed with the causative marker –kvktv, which in the case of verbs of spontaneous motion results in a set of derived verbs of caused motion. The suffix can also be added to most of the verbs of caused motion, introducing another participant that is causing the caused motion. However, I have not analyzed such verbs, and I expect that there are idiosyncratic cases among them as well. The verb rurukhun ‘move (something)’, for instance, is related to the verb rurudukutun ‘move (something) carefully’ derived with the causative suffix from *rurudun, containing the same root as rurukhun. To the best of my knowledge, the former, however, does not exist as a verb today.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
<th>Causative verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>ôsun</td>
<td>go</td>
<td>ôsukutun</td>
</tr>
<tr>
<td>andun</td>
<td>arrive</td>
<td>andukutun</td>
</tr>
<tr>
<td>kodonon</td>
<td>enter containment</td>
<td>kodokoton</td>
</tr>
<tr>
<td>fotikidin</td>
<td>enter non-contain.</td>
<td>fotikidikitin</td>
</tr>
<tr>
<td>mudun</td>
<td>ascend</td>
<td>mudukutun</td>
</tr>
<tr>
<td>thokodon</td>
<td>descend</td>
<td>thokodokoton</td>
</tr>
<tr>
<td>tikidin</td>
<td>fall</td>
<td>tikidikitin</td>
</tr>
<tr>
<td>fakutun</td>
<td>pass</td>
<td>fakutukutun</td>
</tr>
<tr>
<td>balin</td>
<td>pass</td>
<td>balikutin</td>
</tr>
<tr>
<td>koyonon</td>
<td>go home</td>
<td>koyokoton</td>
</tr>
<tr>
<td>khôsun</td>
<td>go around</td>
<td>khowsukutun</td>
</tr>
<tr>
<td>timan</td>
<td>cross</td>
<td>timâkoton</td>
</tr>
<tr>
<td>morodon</td>
<td>fly</td>
<td>morodokoton</td>
</tr>
<tr>
<td>timon</td>
<td>swim</td>
<td>timikutin</td>
</tr>
<tr>
<td>tobadonon</td>
<td>immerse self in liquid</td>
<td>tobadukutun</td>
</tr>
<tr>
<td>darhindin</td>
<td>move quickly</td>
<td>darhidikitin</td>
</tr>
<tr>
<td>düdun</td>
<td>jump</td>
<td>düdukutun</td>
</tr>
<tr>
<td>konan</td>
<td>walk</td>
<td>konâkoton</td>
</tr>
<tr>
<td>tâtonon</td>
<td>go further</td>
<td>tâtokoton</td>
</tr>
<tr>
<td>yâdun</td>
<td>travel</td>
<td>yâdukutun</td>
</tr>
</tbody>
</table>

Importantly, causative verbs may be derived from all four subclasses of active verbs. Such causative verbs themselves can, in turn, have equivalents in other subclasses. The Lokono motion verb vocabulary is therefore much richer than the above tables suggest. A good example of the various possibilities available are the verbs derived from the root *foti, which encodes movement into non-containment. There is the simple verb fotikidin meaning ‘enter non-containment’, which has an introversive equivalent fotikidan. The latter is used specifically to encode the situation when a girl who had her first menstruation leaves the hut, in which she was sitting for a period of time. There is also a reflexive verb fotikidonon, encoding movement into non-containment, but additionally signaling that the movement is performed in a careful manner. From the speaker’s reactions, I surmise that it is used to talk about sexual intercourse. The same root appears also in a reduplicated verb fotikifotikidin.
meaning simply ‘enter non-containment repeatedly’, which has also an introversive equivalent fotifikifotikidan, and a related subclass IV form fotifotidwan ‘enter non-containment one after another carefully’. There is also an intensified verb fotikidâbon ‘enter further into non-containment’, and at least two causative verbs fotikidikitin ‘cause something to enter into non-containment’ and its introversive equivalent fotikidikitan. Finally, there is also a verb of caused motion fotikitin ‘bring something into non-containment’, which comes with its own set of derived forms. Many of such verbs have very narrow, often culturally-specific uses.

3.10.3 Verbs ôsun ‘go’ and andun ‘arrive’

The verb ôsun is the most semantically general and the most frequently used verb of spontaneous motion. It is an intransitive active verb that encodes a path unspecified with respect to shape. It does not place any restrictions on the type of referents that can be encoded by its subject, and it does not encode manner of motion. It is in principle unspecified for the type of medium in which the movement takes places, but medium-specific verbs are often preferred if the motion event takes place in air or water. It also typically describes motion in various types of vehicles, though there is a specific verb nâkonon ‘paddle’. Example (170) comes from a narrative about how the inhabitants of Cassipora travelled to the city, before dirt roads were built.

(170) Ken kia lokhodi bôsa tâ, ani, thoyoshikwanro.
    këŋ kia lok³-o-di b-o:sa ta: t³oyo–fikwâ–n–ro
    and DSC inside–VIA 2SG–go far elderly–house.POSS–LOC.WHR–ATL
    ‘And through it, you go far, um, to the city.’

In (170), the verb ôsun ‘go’ refers to travelling down the Suriname River, mentioned earlier and referred to by the directional expression kia lokhodi. The configurational noun loko ‘inside’ is typically used with paths, roads, creeks, and rivers conceptualized as transportation arteries. The verb ôsun is deictically unspecified, but it is normally interpreted as translocative (i.e. encoding motion away from the deictic center), especially if it appears on its own in a clause. It can, however, have a cislocative meaning as well (i.e. encoding motion toward the deictic center), particularly if it is combined with the venitive enclitic =the. The translocative use was exemplified in (170) above. The cislocative reading of the verb ôsun is given in (171), an example from a life story of one of the participants, in which she explains that she moved from Suriname to French Guiana because of the War of the Interior (1986-1992).

(171) Dôsathe yanthero nabo.
    d–o:sa=t³e yâ–n–t³e–ro n–abo
    1SG–go=VEN LOC.DEM–LOC.WHR–VEN–ATL 3SG–INST
    ‘I went toward (French Guiana) with (my family).’

In (171), the fossilized atelic form of the demonstrative adverb ya in the location and goal directionality encodes the goal of movement. The verb ôsun can encode movement from, to, and across from the deictic center irrespective of whether there
is a clearly defined source or goal. It is interesting to notice, however, that the
cislocative uses of the verb ôsun appear to be felicitous only if the goal has not been
reached—a feature that contrasts the verb ôsun ‘go’ with the verb andun ‘come’.

The verb andun encodes movement toward the deictic center, whether expressed
explicitly or not. If the goal is reached, andun is preferred over the verb ôsun. It is,
however, not always clear what the difference between the utterances with telic and
atelic goals is in the case of andun. The following two examples, containing a telic
goal and atelic goal respectively, were both translated by participants as telic.

\[(172)\] \[\text{Danda karhowin yeyendwa loko.}\]
\[d\-\text{ànda} \quad \text{ka}\text{-}\text{Òn} \quad \text{ye}\text{-}\text{yên-dwa} \quad \text{loko}\]
\[\text{1SG} \- \text{come} \quad \text{savanna}\-\text{EP-LOC.WHR} \quad \text{ITR}-\text{melody-}\text{VBJZ.INTRV-REFL} \quad \text{inside}\]
\[\text{‘I arrived on a savanna singing.’}\]

In (172), the noun karhow ‘savanna’ is marked as a telic goal, and was translated
accordingly. In (173), however, the noun shikwa ‘house’ is marked as an atelic goal,
but it is also consistently translated as telic.

\[(173)\] \[\text{Deimedáka, dadibaledáka, dandathe dashikwanro thabo.}\]
\[d\-\text{eime-}\text{da-}\text{ka} \quad \text{da-}\text{dibale-}\text{da-}\text{ka}\]
\[\text{1SG} \- \text{fish-VBJZ.INTRV-PFV} \quad \text{1SG} \- \text{smoke.for.food-}\text{VBJZ.INTRV-PFV}\]
\[d\-\text{ànda=t}^\text{³} \text{e} \quad \text{da-}\text{fikwã-} \text{n-ro} \quad \text{t}^\text{³} \text{-abo}\]
\[\text{1SG} \- \text{arrive=VEN} \quad \text{1SG} \- \text{house.PSS-LOC.WHR-ATL} \quad \text{3F} \- \text{INST}\]
\[\text{‘I have fished, I have smoked (it), I arrived home with it.’}\]

In this particular case, we can explain the grammatical inconsistency by referring to
cultural practices. It is not accepted in the Lokono culture for the hunter to come
home directly with his catch. Instead, he should leave it nearby his home and inform
his wife about the location, who then goes and picks it up. Larger hunting parties
including many hunters would often meet their respective wives half way in
specially designated resting areas. Group hunting is seldom practiced today, and
traces of such places are only preserved in the place names of the area (chapter 6),
but the practice of not bringing the catch home oneself is still occasionally practiced.
Often more than one person (e.g., wife and children) is necessary to carry the meat
home from where the already tired hunter left it. The ethnographic record tells us too
that the practice is inextricably linked to the animistic beliefs of the Lokono: it is a
way of making sure that the spirit of the killed animal will not follow the hunter
home (Goeje 1942; Roth 1915). Such inconsistencies between the telic and atelic
uses of andun are, however, more common, and appear also in contexts other than
hunting. It appears therefore that the verb andun lexicalizes in fact telic motion to
the deictic center; the telicity distinction expressed in the directional phrase is
neutralized in this case. The verb ôsun, on the other hand, is deictically unspecified,
but its functional domain is limited by that of andun. In practical terms ôsun is used
for all translocative events and atelic cislocative events.
3.10.4 Enter containment and enter non-containment

The reflexive verb *kodonon* ‘enter containment’ describes a motion event, in which the Figure enters a containment configuration. Lokono has a number of containment configurational nouns distinguishing different types of container Grounds, making it therefore interesting to find a verb lexicalizing such configurations. However, if the Ground is a liquid, a more specific or a more general verb is used (e.g., *tobadonon* ‘immerse oneself in liquid’ or *òsun* ‘go’). Non-containment configurational nouns can encode the goal with *kodonon*, provided they imply a containment configuration in the given context. If expressed at all, the goal is always atelic—that is, marked by the atelic suffix –*ro*. The verb *kodonon* encodes therefore a process of configurational change of the durative translocation type—the Figure must undergo the process of transgressing the non-containment configuration and entering into a containment configuration. In (174), a reaction to a scene from the *Event Triads* stimulus, in which a gray block moves under a brick bridge, is given (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(174) *Thokodwa thâbonro, thokodwa tholokonro.*

\[
\begin{align*}
\text{bo–kodwa} & \quad \text{t}^b\text{o–} \text{bō–} \text{n–ro} \\
3F_A=\text{enter.contain.REFL} & \quad 3F_A=\text{under–LOC.WHR–ATL} \\
\text{bo–kodwa} & \quad \text{t}^b\text{o–} \text{lokō–} \text{n–ro} \\
3F_A=\text{enter.contain.REFL} & \quad 3F_A=\text{inside–LOC.WHR–ATL} \\
\end{align*}
\]

‘(Gray block) entered under (the brick bridge), it entered (into) it.’

In (174), the containment configuration is expressed once with the configurational noun *âbo* ‘under’, and once with *loko* ‘inside’. Importantly, the verb is deictically unspecified, but it can be combined with markers of associated motion, as in the following two examples, which can both be used when inviting someone to enter a building.

(175) *Bokodwathe.*

\[
\begin{align*}
\text{bo–kodwa} & \quad \text{t}^e \\
2SG_A=\text{enter.contain.REFL=VEN} \\
\end{align*}
\]

‘Enter (i.e. come inside).’

In (175), the verb *kodonon* appears with the venitive enclitic =*the*, signaling motion toward the deictic center. This expression can be uttered by a person inside the building inviting the addressee to come inside. In (176), the verb *kodonon* is in turn combined with the andative suffix –*ba*, signaling motion away from the deictic center.

(176) *Bokodoba.*

\[
\begin{align*}
\text{bo–kodo–} & \quad \text{t}^e \\
2SG_A=\text{enter.contain.REFL=AND} \\
\end{align*}
\]

‘Enter (i.e. go inside).’
This expression, on the other hand, can be uttered by a person standing outside, encouraging the addressee, who is also outside, to go inside, thereby moving away from the deictic center. In both cases, however, the Figure is entering a containment configuration.

Within the domain of landscape, the verb kodonon can combine with the noun konoko ‘forest’ and onikhan ‘creek’, when these are entered from a more open type of space. In the former case, the Figure must enter the forest from a savanna, a road, or a village. In the latter case, the Figure typically enters the creek from a more open watercourse such as a river or a swamp. This is illustrated in (177), which comes from a story about the origin of Cassipora village.

(177) Nakodwasabokathe to onikhan lokonro.
na–kodwa–sabo–ka=t³e to ’uni-k³ân lokô–n–ro
3PLA–enter.contain.REFL–CMPR–PFV=VEN DEM.F rain–DIM inside–LOC.WHR–ATL

‘They sailed further up the creek toward here.’

The ancestors of the inhabitants of Cassipora are believed to have come through the Suriname River. When they came across the mouth of the Cassipora creek, they entered it, and sailed further up the creek toward the place where the village is located today.

As a side note, the verb kodonon is also used to encode the movement of the sea. The expressions barhâ kodonon ‘sea entering containment’ is used to describe the incoming tide. The movement of the tide out to the sea, however, is called barhâ koyonon ‘sea returning’; hence not with the antonymic verb fotikidin ‘enter-non-containment.’ The antonymic pair is used to encode the cardinal directions. The phrase hadali kodonon ‘sun entering containment’ and hadali fotikidin ‘sun entering non-containment’ combined with the configurational khona ‘adhere’ and complex directional mâyã, mean respectively east and west (i.e. e.g., hadali kodonon khona mâyã ‘east’).

The antonymic verb fotikidin ‘enter non-containment’, on the other hand, is used when the Figure enters a non-containment configuration. Somewhat counterintuitively to the speakers of English, this closest equivalent of the English verb exit combines with goal rather than source expressions. The verb fotikidin functions as the antonym of kodonon, but not in the way exit and enter do. The English verbs encode respectively movement into containment and movement out of containment. The Lokono verbs encode movement into containment, and movement into non-containment. This is illustrated in example (178), a typical response to two scenes from the Event Triads stimulus, in which a ball rolls into a circular enclosure and then rolls out of it (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(178) Thokodwa tora balalaro tholokonro; thufotikida kiba.
t³o–kodwa to–ra balala–ro t³o–lokô–n–ro
3FA–enter.containment.REFL DEM.F–MED round–F 3FA–inside–LOC.WHR–ATL

t³i–futikida kiba
3FA–enter.non.containment again

‘That ball entered (into an enclosure); it entered again (into the open space).’
At first glance, such responses may seem elliptic with regard to the source expression—a common problem in repetitive elicitation sessions. However, the few cases of source directional phrases attested with the verb fotikidin appear to be the result of me asking if such directional phrases are possible with the verb. In natural discourse, goal is typically expressed with the verb fotikidin, as in (179) and (180) below. Example (179) comes from a description of a hunting trip.

(179)  
Wafotikidashin karhowninro [...]

wa-fut'ikida-ʃĩ-ŋa
1PL-enter.non.containment-ANTCP-NMLZ

karrow-ɲi–n–ro
savanna–EP–LOC.WHR–ATL

‘Just before entering onto a savanna [...].’

In (179), the noun karhow ‘savanna’ functions as the Ground toward which the Figure is moving. As usual, the source is not named but it is clear from the linguistic and situational context that it is the forest that the Figure is about to leave. Example (180), in turn, comes from a description of an old route from Cassipora to Matta. It contains two borrowings from Sranantongo, the temporal expression te leki ‘until, and the landscape term liba ‘river’.

(180)  
Te leki bufotikida libanro.

teleki bi-fut'ikida
until 2SG-enter.non.containment
liba–n–ro
river–LOC.WHR–ATL

‘Until you enter into the river.’

It is instructive to compare example (180) with (177). In (180) the noun liba ‘river’ functions as the Ground toward which the Figure is moving. From the preceding context, it is clear that it is a creek that the Figure is leaving. The two entering verbs kodonon ‘enter containment’ and fotikidin ‘enter non-containment’ thus collocate with the two different types of landscape features. The former typically combines with konoko ‘forest’ and onikhan ‘creek’, which are considered more contained spaces than karhow ‘savanna’ and liba ‘river. The last two, on the other hand, typically combine with the verb fotikidin, since they are considered open spaces. The two verbs provide us with an insight into how the major landscape features of the area are conceptualized: as containers and as open spaces.

3.10.5 Venitive enclitic =the

The venitive enclitic can be attached to active and stative verbs, including the empty verb, and to nominalizations, but also to directional phrases and nouns. Generally speaking, it indicates movement toward the deictic center, as in example (181), in which it appears with a motion verb timan ‘cross’.

(181)  
Natimâkathe, andun Mopentinro.

na-tîma-–ka=t’e
3PLA–swim.INTRV–PFV=VEN

ândi-ŋa
come–NMLZ

mopenti–n–ro
Mopenti–LOC.WHR–ATL

‘They crossed toward here, coming toward Mopenti (place name).’
Example (181) is part of the description of the movement of the inhabitants of Cassipora, before the permanent settlement was established. The venitive enclitic orients the movement toward the deictic center—the location of the Cassipora village today. The ancestors have crossed in this direction through creeks and savannas, coming as far as Mopenti, where an older settlement was located.

The venitive suffix can be attached to verbs that do not encode motion, in which case it adds the motion component to the event. Notice the temporal order of the subevents; the motion event precedes the main event encoded by the verb. This is exemplified in (182), which comes from the description of the day when a young woman leaves the hut in which she was sitting for a few days after her first menstruation.

Example (182) Dakuthu Firoda kudatheda de.

1SGA–grandmother firo=DIRCT kida=t=e=da=de

‘My grandma Firo came to wash me.’

In (182), the speaker is telling about her experiences, when she had her first menstruation. At the time young girls are left in seclusion, attended only by their grandma for a few days to learn valuable household skills. The transitive verb kudun ‘wash’ appears here with the venitive enclitic =the, which signals that the grandmother came to wash the speaker in her secluded hut. It is interesting to notice, moreover, that the deictic center is not necessarily that of the speech event. In (182), the deictic center is the secluded hut, to which the speaker was confined after her first menstruation, not the place where the speaker is at the moment of speaking.

The enclitic =the is also occasionally found in stative predicates. If the stative predicate contains a noun, the enclitic may combine with the future marker to encode motion (183). Example (183) comes from a description of a consultant’s family given by a speaker in Matta, and explains that her husband will only be back tomorrow from hunting.

Example (183) Môthiâbohathe dei.

morning–INTS–FUT=VEN=DIRCT=3SGB

‘He will come back early in the morning.’

The venitive enclitic can encode motion on smaller scales as well, and it does not have to follow the predicate directly. In example (184) it is attached to a directional phrase encoding the goal of motion of the verb of caused motion shikin ‘put’.

Example (184) Bushikiha aba mawaditho thudiakothe kidaba.

2SGA–put–FUT one PRV–long–SBJ.REL.3F 3FA–top=VEN=too–ADD

‘You will put one short one on top of it too.’

Example (184) comes from a demonstration how to make a simple basket (kêkê). The speaker instructs the listener where the shorter reed strips have to be placed.
Both with active and stative predicates the venitive enclitic may also have a secondary aspectual meaning. In both cases the venitive indicates that a process has taken place, and can often be translated as 'become'. An example with a stative and active predicate is given (185) and (186), respectively, which were discussed above.

(185) Thoyobekathe ye.
    tʰoyo–be–ka=tʰe=ye
    elderly–PL–PFV=VEN=3PLB
    ‘They all have become old.’

Example (185) without the venitive enclitic would be a simple statement about a state-of-affairs: they are all old. The venitive adds a progressive or developmental component to the description. Similarly in (186) with a derived active verb shokotonon ‘make oneself smaller’.

(186) Thoshokotwasabokathe, wakabura.
    tʰo–ʃoko–twa–sabo–ka=tʰe
    3F small–VBL,REFL–CMPR–PFV=VEN 1PLA–fishery
    ‘Our fishery (our land) has become smaller.’

Importantly in (186), the verb, being an active verb encoding an activity, not a state, already has a dynamic component. The addition of the venitive enclitic suggests that the process is not yet accomplished. The aspectual use of the venitive is particularly useful in time expressions, where it signals that the named time of the day has almost come. This is exemplified in (187), where the time of the day is expressed by the term kasakonro—a combination of kasako ‘daylight’, the where-marker, and the atelic marker—encoding the time of the day just before first sunrays appear (lit. ‘toward the sunlight’).

(187) Kasakonrokath we.
    kasakɔ–n–ro–ka=tʰe=we
    daylight–LOC,WH–ATL–PFV=VEN=1PLB
    ‘It’s almost dawning.’

Example (187) has the morphosyntax of a stative clause. Such expressions are a common way of expressing the time of the day, and can also function as greetings. The venitive marker is added to be more specific; it implies that the relevant time of the day has almost been achieved.

3.10.6 Andative suffix –ba

As opposed to the venitive enclitic, the andative –ba is a suffix always attached to the verb. The suffix appears to be used as a marker of associated motion only—that is, it does not have an aspectual meaning such as the venitive. If added to a motion verb it signals that the movement is oriented away from the deictic center. The semantic contrast between the two markers of associated motion can be observed by comparing the two examples of the verb kodonon ‘enter containment’ given above.
In (175), the verb *bokodwathe* contains venitive enclitic =*the*, signaling motion toward the deictic center. In (176), the same verb is combined with the andative suffix, resulting in *bokodoba*, implying motion away from the deictic center. The former can be uttered by somebody on the inside, while the latter by someone on the outside, encouraging a third party to enter. Such pairs can be formed from all Lokono motion verbs, since none of them is deictically oriented, with the exception of the verb *andun* ‘arrive’.

Similarly to the venitive enclitic, the andative marker can also be attached to verbs that do not encode a motion event. In such cases it adds a motion element to the meaning of the predicate, as in example (188), in which the verb *dukhuñ* ‘see’ appears. The example comes from a story about forest spirits who are collecting fruits high in the tree branches, while a Lokono man is secretly shooting at them with his bow and arrow. As one of them falls, the other spirits wonder where he disappeared to. Notice that in (188) the masculine prefix is used to encode the subject of the verb. As a rule, the masculine gender is only used when the referent is a Lokono man. In this case, however, the reported utterance is said by one of the spirits and the masculine gender is used by the spirit to talk about a fellow spirit—a member of the same group. The masculine gender here therefore is extended to a male member of the same group in order to express the group.

(188) *Budukhuba halon lösun.*

\[
\begin{align*}
\text{bi–dikhi–ba} & \quad \text{halö–n} \\
\text{2SG.A–see–AND} & \quad \text{3SG.A–go–NMLZ}
\end{align*}
\]

‘Go look where he went.’

In (188) the addition of the andative marker imparts a motion meaning to the predicate. The motion is oriented away from the deictic center—that is, the location where the forest spirits are. The main verb is the transitive verb *dukhuñ* ‘see’, which in (188) takes a complement clause introduced by the interrogative *halo* ‘where’ (§ 3.11.3). The addition of the andative suffix or the venitive enclitic, though signaling a motion event prior to the event lexicalized by the verb, does not change the predicate as a whole into a motion predicate that combines with the expression of goals. Directional phrases encoding goals are not normally found in such clauses with the markers of associated motion attached to verbs that do not encode motion on their own.

Finally, the two markers can be combined, in which case the meaning of the predicate includes both motion away from the deictic center and toward the deictic center. Such combinations can only be used to describe situations in which the movement thither happens prior to the event encoded by the verb and the movement hither happens after it, as in example (189) from the story in the online Appendix IV.

(189) *Wadukhubathe lirabo koban.*

\[
\begin{align*}
\text{wa– dik}^{h} & \text{–ba} \quad \text{li–ra–bo} \\
\text{1PL.A–see–AND} & \quad \text{DEM.M–MED–CNTR}
\end{align*}
\]

‘We will go see the field of the other one, and come back.’
In (189), the mother and the daughter are about to inspect the field of one of the prospective sons-in-law. The two markers are attached to the verb *dukhun* ‘see’. The order of the suffixes is fixed and corresponds to the order of the motion events involved: first going away and then coming back. The valency of the verb does not change: the object of the transitive verb is expressed by the following noun phrase, but there are no directional phrases encoding the direction of any of the motion subevents.
3.11 Expression of location in complex clauses

To complete the grammatical sketch of the grammar of space, in this section I look at the expression of location in complex clauses. I first discuss locative relative clauses, which contain the relativizers discussed earlier (§ 3.11.1). Secondly, I turn to adverbial clauses of location, which are typically introduced by a lexicalized form yonotho, containing the locative anaphoric adverb, the where-marker –n, and the feminine relativizer (§ 3.11.2). Finally, I discuss the structure of locative complement clauses (§ 3.11.3).

3.11.1 Relative locative clauses

A directional phrase combined with a relativizer can function as a nominal predicate in the Locative Equation encoding spatial relations that are considered permanent. Alternatively, such a phrase marked by a relativizer can be used as an equivalent of a relative clause (§ 3.5.5). In this case, the relative clause conveys the information about the location of the referent of the modified noun. This is exemplified in (190), which comes from a narrative about land titles.

Example (190) has the form of an empty verb clause due to the fact that an active verb is negated with the privative prefix. The subject is encoded on the empty verb, even though it is expressed by a preposed phrase (and therefore the expletive prefix m– is expected on the empty verb). This may be a sign that the speaker is not fluent in Lokono, a fact reflected also in the incorrect possessed form of the noun horhorho (which should be horhorha). The subject noun phrase is complex and contains a relative clause modifying the noun phrase to wafodobe ‘our bosses’. The relative clause consist of the relational phrase Parmurbo diako, unmarked for location and goal directionality, the head of which is suffixed with the feminine relativizer.

Such relative clauses can be formed from any type of a directional phrase. In (191), one more example is given, illustrating that the Ground can also be expressed by a prefix, as in any other type of a directional phrase with a configurational noun. The example comes from an instructional narrative about making a swidden.

Example (190) comes from a narrative about land titles.

(190) To wafodobe Parmurbo diakotho mashikati na worhorho wamun.
    to w–afodo–be parmurbo dako–tō
    ma–jiːka–tī n–a w–oɾoɾo wa–mĩŋ
    PRV–give–DES 3PLA–E.V 1PLA–landform 1PLA–dat
    ‘Our bosses (who live) in Paramaribo do not want to give us our land.’

Example (191) comes from an instructional narrative about making a swidden.

(191) Dan bulāduha to adabe tholokoθo.
    dan bi–la:di–ha to ada–be tō–loko–tō
    ‘Then you fell the trees that are in (the area you want to turn into a swidden).’
In (191) the relative clause modifies the object of the main verb. The main predicate is encoded by the verb *lādun* ‘fell (trees)’, the object of which is expressed by a full noun phrase. The relative clause consists of a directional phrase containing the configurational noun *loko* ‘inside’, unmarked for location and goal directionality. The possessor, encoding the Ground, is expressed by the 3rd person prefix and refers to the area demarcated as the future swidden. Although in both cases, the directionality marker is absent, it should be kept in mind that this is a feature of the directional phrase with certain types of configurational nouns. If the directionality marker cannot be dropped, it is part of the relative clause, preceding the relativizer.

3.11.2 Adverbial locative clauses

Adverbial clauses of location are introduced by the lexicalized combination *yontho*, containing the locative anaphoric adverb *yo*, the where-marker, and the feminine relativizer. Similarly to relative clauses, the adverbial locative clause contains therefore a relativizing element. Similarly to other types of adverbial clauses, locative clauses also contain an event nominalization (§3.5.6). This strategy, combining features of relative and adverbial clauses, is used when the adverbial phrase indicates a specific location, as in (192). The example comes from a description of a hunting trip, during which the speaker came across a place where a logging company was operating in the past.

(192) *Dadukhāka karhow bandi yontho koba nanekhebon.*

\[
\begin{array}{ll}
d\text{–}d\text{i}k^\text{h}a\text{–}k\text{a} & k\text{ar}w\text{o} b\text{ā}n\text{–}d\text{î} \\
\text{1SG}\text{–}see\text{.INTRV–PFV} & \text{savanna surface–VIA} \\
y\text{ō}–n–t\text{o}=k\text{oba} & n\text{a}–n\text{ek}^\text{bo}=n \\
\text{LOC,ANPH–LOC,WHR–SBJ,REL}\text{=}REM,PST & \text{3PL,–work–NMLZ} \\
\end{array}
\]

‘I inspected the savanna, where they used to work.’

In (192), the main clause contains the introversive verb *dukhan* ‘inspect’, related to the transitive verb *dukhun* ‘see’. It is an intransitive verb, therefore the directional phrase *karhow bandi* indicates the location of the event. The following dependent clause elaborates on the relevant location. It is introduced by the element *yontho* followed by an event nominalization encoding the activity that took places at the location.

Alternatively, the adverbial clause may not refer to a specific location. Such clauses are comparable to the English sentences with *wherever*. In this case, the combination *halonron*, containing the interrogative locative *halo*, the where-marker –*n*, and the enclitic =*ron* ‘only’ (a lexicalized combination the restrictive –*ro*, and the event nominalizer –*n*) introduces the clause. Such clauses are typically topicalized and appear before the main clause, as in (193), which is a general comment on life: wherever you go, you find the same thing: good and bad people.
(193) Halonron bôsun, bâmunka no.
halô–n=rôm  b–o:sî–ŋ  b–a:mîn–ka=no
where–LOC.WHR=only 2SGA–go–NMLZ 2SGA–have–PFV=3F
‘Wherever you go, you have this.’

In (193) the main clause contains the transitive verb âmunin ‘have’, the subject and object of which are expressed by bound person markers. The preposed clause functions as an adverbal clause of location, encoding the goal of the motion of the verb ôsun.

3.11.3 Locative complement clauses

In contrast to relative locative clauses and adverbial clauses of location, locative complement clauses are an indispensable part of the main clause. The complement clause, which has the form of an event nominalization, takes in such cases the place of the object of the complement-taking predicate (see § 3.4.6.4). The locative interrogative halo ‘where’, combined with the where-marker, introduces complement clauses of the verbs of knowledge, perception, and speech. If there is no verb in the complement clause, the combination halon functions as a stative predicate, and the event nominalizer is attached to it as in (194). The example comes from a conversation with an inhabitant of Washabo, who does not know where the rest of his family lives today.

(194) Deitha kho haloninda ye.
    d–eit’a=k’hô  halô–p–i–n=da=ye
    1SGA–know=NEG where–LOC.WHR–EP–NMLZ=DIRCT=3PLB
‘I don’t know where they are.’

In (194) the directional phrase halon is followed by the event nominalizer. As such it is a stative clause which instead of a TAM marker contains the event nominalizer –n, the subject of which is expressed by personal enclitic. If there is a full verb in the complement clause, it has to assume the nominalized form. The event nominalizer attaches in such cases to the main verb, as in (195), which comes from a traditional story about forest spirits.

(195) Dei kho itha halon thôsun kidaba.
dei=k’hô  i:t’a  halô–n  t’h–o:sî–ŋ  kidaba
1SG=NEG know where–LOC.WHR 3FA–go–NR too–ADD
‘I do not know where she went again too.’

In (195), the complement clause is introduced by the element halon, but the nominalized intransitive motion verb ôsun is used—the subject is expressed by the prefix on the verb and encodes the Figure. A paratactic construction is possible as well, both as equivalent of (194) and (195). In (196), an example is given from the story in the online Appendix IV.
Example (196) differs but little from (195). The order of the clauses is reversed, and the locative interrogative is additionally combined with an atelic suffix, meaning ‘toward’. More importantly, in (196) there is the discourse marker kia, which refers back to the first sentence—the discourse marker is only present if the locative clause precedes the clause with the verb of knowledge, perception or speech.

Although the clauses with halon discussed above can introduce also complement clauses of affirmative sentences that indicate a specific, known location, I have also attested a different construction in such contexts. The complement clause can be introduced by the element yontho, which is typically found in locative relative clauses. This is exemplified in (197), which comes from the description of different place names in the Cassipora area.

In (197), the same verb âmunin ‘have’ that appeared in (193) is used. In this case, however, the object of the verb is expressed by the clause introduced by yontho. As typical of dependent clauses, an event nominalization is used. However, this structure today is also replaced by an equivalent without the event nominalization given in (198), which is a description of a photograph showing a farm.

In (198) the second clause has the structure of the main clause, without any morphological markers of dependency (i.e. the event nominalizer –n). Such paratactic constructions may be typical of Lokono grammar, but are more frequently used by semi-speakers, which suggests they may be contact-induced.
3.12 Locative questions

This description of the Lokono grammar of space started with a locative question, which is the syntactic frame used to elicit spatial descriptions, including the Basic Locative Construction, the Posture Construction, and the Locative Equation (§ 3.6). I then also explained that the BLC echoes the structure of the basic locative question. Having described the nuances of the BLC and its functional equivalents, I now give a fuller account of locative questions, which mirror in fact not only the BLC, but the whole spectrum of locative constructions.

I start with the basic locative question given again in (199). As explained, it contains the locative interrogative halo ‘where’ forming a directional phrase with the location and goal directionality marker –n. This directional phrase is part of a stative predicate formed by the addition of the perfective suffix, followed by the expression of the Figure, completing the stative clause.

(199) Halonka no?
  halō–ŋ–ka=no
  where–LOC.WHR–PFV=3Fb
  ‘Where is it?’

This simplistic structure shows the same structural variation observed in the BLC and other stative locative clauses. In principle, the telic source marker can substitute for the location and goal directionality marker (i.e. halo wâya ‘from where’), but questions about source are typically framed as active clauses discussed below. The via directionality marker –di, in turn, is added on top of the location and goal directionality marker, showing that the combination is partly lexicalized (i.e. halondi ‘through where’). However, such a question requires a specific context, in which the type of directionality—the very specific via directionality—is already assumed. I have not come across such a stative question in natural speech. The atelic source marker and the what-marker are, on the other hand, incompatible with the locative interrogative. Similarly to other stative locative clauses, however, the perfective –ka can be substituted with other TAM markers, if special semantic distinctions need to be made.

Configurational nouns cannot be part of a basic locative question with the locative interrogative halo. The basic question inquires about the location of the Figure without presupposing the type of spatial relation. However, this information might be given, and the speaker might merely want inquire about the Ground. In this case, it is possible to use a construction with the object interrogative hama ‘what’ combined with one of the specific configurational nouns, as in (200).

(200) Hama rakonka no?
  hama     rakō–n–ka=no
  what     inside[liquid]–LOC.WHR–PFV=3Fb
  ‘What liquid is it in?’

This type of a question with the specific configurational nouns assumes the type of spatial relation that holds between the Ground and the Figure, which in this case is
containment by a liquid. Structurally, such questions mirror the structure of stative locative clauses; the object interrogative hama functions as a placeholder for the Ground expression, and is followed by a configurational noun, and the directionality marker, forming a complete stative clause. However, such questions are quite far removed from the basic locative question, in which case it is both the Ground and the spatial relation that are unknown. Importantly, the what-marker bithi cannot combine with the locative interrogative halo ‘where’. The structure given in (200) is therefore the only one available if one wants to ask a question that presupposes the ontological status of the referent, as in (201). The example comes from an elicitation session based on the Event Triads stimulus, showing a ball moving toward a wooden block. The speaker at this point is merely asking himself what the Ground is, probably wondering how to best call the wooden block in Lokono.

(201) Hama bithiro thōsa to balalaro?
    hama    bithi-ro    tít-o:sa    to    balala-ro
    what    LOC.WHT-ATL    3FAR-go    DEM:F    round-F

‘What did the ball move toward?’

In (201), the speaker used the directional phrase hama bithiro, with the object interrogative hama, which is compatible with the semantics of the what-marker bithi. Alternatively, if the Ground were a person, the interrogative halikan ‘who’ could substitute for hama. Such questions are relatively rare in the corpus, since in most cases, the ontological status of the Ground is not known. Importantly, however, the what/where distinction obtains both in assertions and in questions.

A question about the location of an entity can also be framed as an equative clause. The contrast between a stative and an equative locative question echoes the distinction between the Basic Locative Construction (a stative clause) and the Locative Equation (an equative clause). The meaning of the former, exemplified above in (199), is colored by the semantics of the TAM suffixes, most importantly the perfective suffix –ka. When compared to an equative clause, this imparts the stative clause with a resultative meaning. An equative locative question, on the other hand, construes the spatial relation as permanent. An example of such a question is given in (202).

(202) Halontho to?
    halô–n–tít'o    to
    where-LOC.WHR–SBJ.REL:F    DEM:F

‘Where is it?’

In (202), the interrogative directional phrase halon is combined with a relativizer and functions as a nominal predicate, the argument of which is expressed by the feminine demonstrative pronoun. Such questions are not common and are restricted to the same functional domain as the Locative Equation—that is, spatial configurations that are considered permanent. This includes questions about the home village of a person, questions about the typical habitat of animals and spirits, and interestingly for the discussion of landscape, questions about the location of landscape features. An example of a question enquiring about the location of a creek
is given in (203). The examples was uttered by a speaker who wanted to confirm if what I was interested in is the location of the creek called *Simo Kriki* ‘Simon’s Creek’, which is only known under its Sranantongo name.

(203) *Halontho to onikhan?*

| halō–n–tɔ | to | ṭiŋ–kɔŋ |
| where–LOC.WHR–SBJ,REL:F | DEM:F | rain–DIM |

‘Where is the creek?’

In (203), the speaker used a locative question frame to ask the question instead of a stative clause, since the location of the creek is permanent, not a result of motion or a displacement. Such locative questions are fairly rare, and in spontaneous discourse I have only attested them with frequency in the landscape domain. This of course must be biased to a certain degree by the focus of the project, but it is nevertheless noteworthy that landscape features in particular are thought of as permanently anchored in space. Such questions are virtually impossible with the what-marker *bithi*, since the types of Ground-Figure constellations that are considered permanent do not include moveable objects as Grounds.

Finally, the interrogative directional phrases can function as adverbial expressions in active and stative clauses. In such cases the (non-interrogative) directional phrase encodes the location of the event or the goal or source of motion, depending on the type of the predicate. The interrogative directional phrases turn such clauses into questions, as in (204).

(204) *Halon bōsabo?*

| halō–n | b–o:sə–bo |
| where–LOC.WHR | 2SGA–go–PRG |

‘Where are you going?’

In (204), the location and goal directionality marker is used, which due to the motion semantics lexicalized in the main verb receives a goal interpretation. In this case, the atelic suffix could also be added to the directional phrase, if the question is about the atelic direction of movement rather than the telic goal. If the question is about the source of movement, the directional phrase *halo wâya* ‘from where’ is used instead. The via directionality equivalent *halondi* ‘through where’ was not attested in the natural data that I collected, but I assume that given the right context it could also be used in such interrogative locative clauses.
4. Landform terminology

Although landscape is fundamental to human experience, landscape terminology is still a fairly understudied phenomenon in linguistics. The study of place names, which are one system of landscape categorization, and frames of reference abstracted from geographic features are notable exceptions, but there is more to landscape than that (Basso 1996; Brown 1983; Hunn 1996; Kari 1989; Langendonck 2007; León 1994; Levinson 2003; Mithun 1984). Recent studies of the linguistic encoding of landscape in a number of genetically and areally distant languages have explored a number of landscape categorization systems. This line of research has stimulated a discussion about the linguistic, utilitarian, and geophysical factors shaping the language-specific organization of the landscape domain, as well as the possible cross-linguistic common denominators within it, and the relation between proper place names and generic landscape terms as different systems of landscape categorization (Bohnemeyer et al. 2004, Brown 2008, Burenhult 2008b, Derungs et al. 2013, Johnson and Hunn 2012a, Kathage 2005, Mark and Turk 2003, Nash and Simpson 2011, O’Meara 2010, Senft 2008, Whitley 2011).

This chapter falls within the broader discipline of ethnophysiography (Mark and Turk 2003). It focuses on landform terms, defined as generic expressions referring to land surface forms (e.g., convex, concave, and horizontal landforms). This study explores the domain of landforms in Lokono, an Arawakan language of the Guianas. I demonstrate that the expression of landforms in Lokono relies heavily on the single set noun horhorho ‘landform’, which is transnumeral, insensitive to scale and unspecified for shape. It can be used on its own or in phrases with relational and configurational nouns that specify a part or a configuration thereof, respectively. The landform domain is therefore based on partonymic (relational phrases) and spatial relations (configurational phrases). Moreover, landform terms are grammatically grouped together with other nouns denoting places (where-nouns), as opposed to nouns denoting objects (what-nouns). Lokono landform subdomain is better represented in a field-based model—as a function of horhorho with values from the set of the relational and configurational nouns. The system as a whole is insensitive to vegetation, at least partly insensitive to scale, and most likely

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indifferent to material (but see the discussion of vegetation-based landscape features in chapter 5—a subdomain in which water saturation may play a role). As such, this study is an ethnolinguistic exploration of concepts central to geomorphology (Ahnert 1998:1; Summerfield 1991:3).

Burenhult and Levinson (2008:137), in their demonstration of the importance of landscape for linguistics, mention that the surface of the Earth can be thought of as a largely continuous terrain. Such models pervade geographic studies, which often operationalize land surface as a function of a horizontal position varied by an attribute such as slope or elevation. Conceptualizations of this type are called field-based (Cova and Goodchild 2002; Goodchild, Yuan, and Cova 2007; Mark 1975; Moore, Grayson, and Ladson 1991; Weibel and Heller 1991). They represent geographical phenomena as a spatial distribution of attributes (e.g., elevation or slope). However, widespread as field-based conceptualizations may be in geography, it has been said that they do not reflect the way humans conceptualize geographic features.

Smith and Mark (2003:419) claim that within folk systems of categorization object-based conceptualizations dominate (Smith and Mark 1998; Smith and Varzi 2000). In an object-based conceptualization, discrete objects (e.g., landforms such as those labeled by the English nouns mountain and valley) are identified in space. The object-based model is common among laypeople, as well as social scientists, and geomorphology professionals (Straumann 2010:59–60). Burenhult and Levinson (2008:137) share this view, and say that the potentially continuous land surface is segmented into quasi-objects at the level of mental constructs we operate with. The term “quasi” is applied because such entities differ from other objects in that their demarcation does not exist independently of human cognition. Compare, for instance, a chair, an object with genuine boundaries, and a mountain, an object with fuzzy boundaries dependent on our idea thereof (Dehn, Gärtner, and Dikau 2001; Smith 2001).

That landforms are a special category of objects is an idea that echoes in semantic theory as well. Lyons (1977:422) distinguishes the category of first-order entities, defined as discrete, moveable entities with perceptual boundaries—for example cat, chair, table. This type of real world entities in Lyons’ theory is expressed in language by first-order nouns. When mentioning landscape elements, including landforms, Lyons points out their “intermediate” status. Unfortunately, he does not discuss what “intermediate” really means in this context. He later calls them place-referring nouns, suggesting that, at least in English, they oscillate between first-order nouns and adverbials such as here and there. Indeed, recent studies show that landform expressions can depart from first-order nouns in their morphosyntactic behavior—a topic further developed in this chapter (Cablitz 2008, Huber 2014, Rybka 2014b).

The idea that landforms are intermediate first-order entities renders their linguistic expression an interesting domain for the study of linguistic variation and language universals, as well as for the study of the relations between language, cognition, culture, and the geophysical world. Moreover, landforms can be expressed by various linguistic means (e.g., nouns or verbs, simplex or complex). Different geophysical parameters may be important for the classification of landforms in a language (e.g., shape, material, vegetation). They may also differ
with respect to their cultural significance (e.g., for subsistence practices, beliefs). Furthermore, landform terms can be organized as a domain in terms of various types of relations (e.g., taxonomic, partonymic, spatial). Finally, the language-specific concepts of landforms can shed light on the existing models of representation used in geography. In the remainder of this chapter, I give an account of the linguistic encoding of landforms in Lokono. I first sketch the sociocultural background of the speakers, and comment on the geophysical characteristics of the local landscape (§§ 4.1 and 4.2, respectively). Subsequently, I describe the methodology and present the grammatical phenomena relevant to the present analysis—the features of relational and configurational nouns, and the grammatical distinction between what-nouns and where-nouns (§§ 4.3 and 4.4, respectively). I then discuss the linguistic characteristics of simplex and complex landform expressions, and show that they belong to the where-category, members of which denote places, not objects (§ 4.5). Finally, I summarize the results, and demonstrate that the Lokono concept of topography is best represented in a field-based model (§ 4.6).

4.1 Sociocultural background

Traditionally, the Lokono were semi-settled farmers practicing swidden agriculture, fishing, hunting, and gathering. The Lokono practiced village exogamy and lived in matrilocal (and matrilineal) family groups. Spiritually, they had an animistic system of beliefs (Goeje 1942; Renselaar and Voorhoeve 1962; Roth 1915; 1924; 1929). However, the traditional way of life is giving way to modernity of the 21st century. Today, probably half of the Surinamese ethnic Lokono population lives in the capital city Paramaribo and its many suburbs, while the Lokono villages are suffering from depopulation (Kambel and Jong 2006; Molendijk 1992; VIDS 2008). The majority have partly given up the traditional lifestyle, and adapted to the cash economy. Many Lokono people do not depend on agriculture anymore, and therefore no longer migrate in search of fertile grounds. The inhabitants of Cassipora village, where data for this chapter were collected, work in tourism or the mining and logging industry, while still practicing farming on a minor scale. On a daily basis, most Lokono eat rice purchased in the city instead of cassava. Hunting, fishing, and gathering have lost their status as subsistence practices. Matrilocal village exogamy is slowly disappearing, while Catholicism has found fertile ground, and introduced a patrilineal naming system. Nevertheless, traces of animism are still part of daily life. With most villages being reachable by road, transport by dugout canoes has virtually disappeared in the area.

4.2 Geophysical background

The Lokono people inhabit the northern parts of the Guianas (French Guiana, Suriname, Guyana), including both the coastal urban centers, and the rural villages
scattered throughout the pericoastal savannas. In Figure 4 the location of Cassipora (called Kasuporhi in Lokono), where the data were collected, is given.\footnote{Figure 4 and Figure 7, as well as Figure 16, Figure 17, and Figure 22 below were created using ArcGIS software by Esri; background maps courtesy of Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GECO, USGS, FAO, NPS, NRCAN, GeoBASE, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap, and the GIS User Community.}

![Figure 4](image-url)

**Figure 4.**—The location of Cassipora and nearby Lokono villages in Suriname.

Cassipora village is situated in an area dominated by sandy savannas, dissected by densely forested creek valleys (Figure 5 and Figure 6 below). The drier the soil, the lower and thinner the forest becomes. At the bottom of the valleys, many creeks flow together, forming larger watercourses, which eventually drain to the Suriname River. In the rainy seasons, the creeks inundate the valleys, creating seasonal swamps and distributaries. Annual rainfall averages 2,200 mm, and average temperature oscillates between 26° and 27° C.
Figure 5.—Photograph of the Cassipora savanna.

Figure 6.—Photograph of the seasonally flooded forest of the Korobali creek.
Figure 7 shows the Cassipora territory together with the major creeks (dark filled lines) and roads (contour lines). The spaces closer to the creeks are the lower lying areas; generally the further away from the creeks the higher the elevation.

![Map of the Cassipora Area](image)

**Figure 7.—Map of the Cassipora Area.**

It should be pointed out that the changes in elevation are small (approximately 50 m). Moreover, they are hard to perceive due to vegetation, which significantly limits the scope of view beyond the savanna. The area gives therefore the impression of being flat and devoid of convex landforms. Due to vegetation cover one can rarely see how the higher grounds slope down toward the creeks. It is the tops of these landforms that the Lokono choose as their settlement sites. Rather than being flat, the area is therefore a mirror image of typical land relief the European may be used to: it is not a flat with convexities, but a flat with concavities.

### 4.2.1 Cultural significance of landscape

The lay of the land is of some importance to Lokono subsistence practices. Certain crops cannot be inundated, while others need a watery soil, and hunting takes place on dry land. Water bodies, nevertheless, seem to play a more important role. The lower lying areas, the seasonally flooded valleys, are home to many species of fish, an important part of the Lokono diet in the past. The domain of hydrological landscape terms shows a higher degree of lexicalization than the domain of landforms described here, which can be a token of its higher salience. A similar conclusion can be drawn from the study of Lokono place names. There are hardly
any place names that do not refer to hydrological features or vegetation stands. Even villages, savannas, and forests are often named after creeks that pass in their vicinity (see chapter 6). No proper place names referring specifically to convex, concave, or horizontal landforms have been attested.

Convex landforms of exposed rock found outside of the immediate Cassipora area, however, do have a special place in the spiritual life of the people. Such rock formations are, for instance, the places where medicinal plants are believed to grow. The ethnographic record shows that such places are believed by the Amerindians of the Guianas to harbor powerful spirits (Roth 1915:235). In the past, strict restrictions were placed on interaction with such landmarks. It was forbidden to point at them, to touch them, or to look at them. It was advisable not to approach them and not to talk about them. Some of these restrictions still apply to stone formations at the Mapana creek, a locality in the periphery of the Cassipora area. Its name is often replaced with an avoidance term Thusakho (lit. ‘It Does Not Name’) in order not to anger the spirit of the place (see also chapter 5 for a discussion of the importance of water spirits). One of the stimuli used in elicitations included a picture of Voltzberg—an example of such a rocky formation, a granite dome of 240 meters, with which some of the speakers were familiar (Figure 8).

![Figure 8.—Photograph of Voltzberg, a granite dome in the Coppenname river.](image)
4.3 Methodological background

The starting point for this chapter were field sessions on topological relations, using Bowerman and Pederson’s (1992) stimulus (henceforth BOWPED), and elicitation sessions on the expression of motion using Levinson’s (2001) material (henceforth LEV). In order to probe the domain of landforms further, two director-matcher tasks were developed. During these tasks, two consultants were presented with an identical set of stimuli. A curtain separated one consultant from the other, so that they could not see each other’s sets. One consultant, the director, described a chosen item from the set in such a way that the second consultant, the matcher, could identify the same item. The participants were encouraged to talk as much as possible while identifying the pictures. When the task was finished, the consultants switched roles and started again.

In the first task, called Where Is The Tree (WITT), the director and the matcher were given a set of black-and-white drawings representing sketchy landforms with trees in different configurations. Two sets were used, each consisting of six drawings: a set with one landform and one tree, and a set with more than one landform and more trees. The drawings represent landforms in an abstract way. A sample drawing from the set is given in Figure 9.

In the second task, called Mountain Photo Matching (MPM), the participants were given a set of fourteen color photographs of landforms and a few distracter
photographs showing landscape elements from other domains—for instance hydrological features. The stimuli depicted features that were typical of the Surinamese landscape in general, and of the village vicinity in particular, as well as features foreign to the local scenery (e.g., the Alps). The pictures were compiled in order to embody a number of real exemplars of landforms, as opposed to the abstract drawings. An example photograph from the set is given in Figure 10.

Once the linguistic means to talk about landforms were collected and analyzed, a follow-up exercise, called the Landform Coloring Task, was developed. In this task, the speakers were presented with a booklet of thirteen pages each showing an identical drawing of land relief. On each page, a different landform term was written, and within each booklet the order of the pages was randomized. The speakers were asked to color the part of the drawing named by the landform term. The participants had no difficulties with reading the terms on the pages, but to avoid any problems I first read out all the landform terms to make sure the task was clear to the participants. An exemplary page from the Landform Coloring Task is given in Figure 11.
The data from these tasks were complemented with examples from natural discourse, conversations during fieldwalks, narratives, and elicitation sessions collected during several years of fieldwork. Examples taken from my own fieldwork are followed by information concerning the place, year and type of recording (in parentheses). In section 4.4 (Linguistic background) there are also a few short examples without a reference that illustrate simple grammatical features of Lokono nouns and verbs. Examples taken from other sources were adapted to correspond to an orthography chosen by the community (Rybka 2013). The ten consultants, six men and four women, who participated in the director-matcher tasks and the coloring task were native speakers of Lokono, fluent speakers of Sranantongo, and generally less fluent speakers of Dutch. The consultants were between 50 and 80 years old, representing the typical age of the Lokono speakers today. Language contact in today’s Lokono society manifested itself in the data set in the occasional use of the Sranantongo term bergi ‘mountain, hill’—this ad hoc borrowing is not discussed further below.

4.4 Linguistic background

As discussed above, Lokono nouns belong either to the masculine or the feminine agreement class (§ 3.3.1). Masculine gender is in principle restricted to nouns denoting Lokono men. Other nouns normally fall into the feminine gender class (but see chapter 5 for interesting exceptions in the landscape domain). Gender agreement is illustrated in (205) and (206) below.

(205) *li sathi wadili*

\[\text{DEM:M} \quad \text{good-SBJ.REL:M} \quad \text{man}\]

‘the good man’
(206) to satho hiyaro
   to       sa–rö       hiyaro
     DEM:F  good–SBJ.REL:F  woman
‘the good woman’

In (205) and (206) above, gender is marked in two places: by the deictically
unmarked demonstratives li and to, functioning as definite articles, and by the
subject relativizers –thi and –tho forming equivalents of relative clauses. The
distinction is also marked on 3rd person pronouns, 3rd person prefixes, and enclitics,
as well as a few other forms.

Lokono nouns are also divided into alienable and inalienable classes, based on
their morphological behavior when possessed (§ 3.3.3 above). The former receive a
possessive suffix when possessed, as in example (207).

(207) dayoron
   da–yorö–ŋ
     1SG.A–cassava.press–POSS
‘my cassava press’

Irrespective of whether the possessor is expressed by a personal prefix attached to
the possessed noun or by a full noun preceding it, the alienable noun yoro ‘cassava
press’ is suffixed with a possessive marker. This suffix is absent on inalienable
nouns such as khabo ‘hand’ in (208).

(208) dakhabo
   da–kəabo
     1SG.A–hand
‘my hand’

Inalienable nouns do not take the possessive suffix. This class includes kinship
terms, relational nouns, including body part terms, configurational nouns expressing
notions such as loko ‘inside’, a number of nominalizations, and a few terms for
culturally salient artifacts. Moreover, a number of nouns have suppletive possessed
forms (e.g., bahu/shikwa ‘house/house.POSS’), while a few nouns denoting unique
entities cannot be possessed at all (e.g., hadali ‘sun’).

Lokono nouns can be further subdivided into three groups, namely singular
object nouns, set nouns and mass nouns on the basis of their behavior with the
exponents of grammatical number (Rijkhoff 2002:54). Singular object nouns such as
wadili ‘man’ in (209) combine directly with a free numeral, and are obligatorily
marked for number (§ 3.3.2 above).

(209) bian wadilinon
   biŋ        wadîli–nọŋ
     two       man–PL
‘two men’
This class includes only person-denoting nouns in Lokono. On the other hand, set nouns such as *ada* ‘tree’ in (210) can combine directly with a free numeral, but are not marked for number. Set nouns are thus transnumeral.

(210)  
biān ada  
two tree  
‘two trees’

This class includes terms for animate and most inanimate entities. However, both singular object nouns and set nouns can take the collective suffix *–be* (e.g., *bian wadilibe* ‘a group of two men’ or *bian adabe* ‘a group of two trees’). In addition, there are mass nouns, such as *mothoko* ‘sand’ in (211).

(211)  
biān mothoko karo  
two sand grain  
‘two grains of sand’

Mass nouns cannot combine directly with a numeral, but require a mensural classifier such as *karo* ‘grain’, which they form a possessive phrase. Headed by a set noun, such phrases inherit the features of set nouns in quantitative expressions.

In the verbal domain, Lokono shows a split into active and stative predicates (§ 3.4.1). The former denote activities, and are characterized by the possibility of expressing the subject with a personal prefix, as in (212).

(212)  
Dadukha no.  
da–dikʰa=no  
1SG.A–see=3Fb  
‘I see it/her/them.’

In (212), the active (and transitive) verb *dukhun* ‘see’ is combined with the 1st person prefix encoding the subject, and followed by the 3rd person enclitic encoding the object.\(^{56}\) The same prefixes that are used to express the possessor on nouns are used to express the subject on active verbs. Stative verbs, on the other hand, lexicalize states, and can express the subject with the same enclitics that encode the object of transitive verbs.

(213)  
Semeka no.  
seme–ka=no  
tasty–PFV=3Fb  
‘It is tasty.’

\(^{56}\) Notice that the final vowel of the root can change (e.g., *dukha/dukhun*). These changes reflect the division of Lokono verbs into four subclasses as well as the vestiges of a realis/irrealis distinction, neither of which is important to the discussion of landforms.
In (213) the subject of the stative verb *semen* ‘tasty’ is expressed by the 3rd person feminine enclitic *=no*, the same form that encoded the object of the transitive verb in (212). Both prefixes and enclitics express person, number (except for 3rd person), and gender (in 3rd person only). The prefixes are preferred to full nouns and free pronouns if the referent is established in discourse.

The verbal paradigm in Lokono is complex, especially on the suffix/enclitic side, with bound forms expressing tense, aspect, and mood (TAM). I describe here only event nominalizations and forms containing the relativizers, which sometimes appear in landform expressions (§§ 3.4.6.4 and 3.4.6.2, respectively). The former take the shape of the verb root suffixed with the event nominalizer *–n*. An example of an event nominalization is given in (214), an utterance from a traditional Lokono folktale.

(214) *To yon landun, lumarchita lubanabowa.*

\[
\begin{array}{c}
\text{DEMF} \\
\text{LOC,ANPH–LOC,WHR} \\
\text{3MA–arrive–NMLZ}
\end{array}
\]

\[
\begin{array}{c}
\text{li–marita} \\
\text{li–banabo–wa}
\end{array}
\]

\[
\begin{array}{c}
\text{3MA–make} \\
3\text{MA–hut–REFL}
\end{array}
\]

‘Having arrived there, he built a hut.’ (BernhARDDorp, 2009, traditional story)

Event nominalizations are used as a complementation strategy and appear in various types of dependent clauses as in (214), where the event nominalization *landun* ‘his arriving’ functions as a temporal adverbial clause. Event nominalizations are inalienably possessed; the possessor encodes the referent participating in the event. They retain many verbal features such as the possibility of attaching TAM markers to encode various TAM distinctions.

Many forms can attach the relativizing suffixes *–thi* and *–tho*, masculine and feminine, respectively. Such forms are typically derived from active and stative verbs, but also from nouns. They are used as the equivalents of relative clauses, as in (205) and (206) above, where the forms *sathi* and *satho* derived from the stative verb *san* ‘good’ modify the nouns *wadili* ‘man’ and *hiyaro* ‘woman’, respectively. The forms containing relativizers also retain many verbal features, such as the possibility of attaching TAM markers.

4.4.1 Structure of the spatial expression

The discussion of landform terms hinges on the structure of the spatial expression—what I call the directional phrase in chapter 0. The Lokono spatial expression can

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57 I use the term *spatial* instead of *locative*, since the latter is unfortunate in suggesting the locational directionality only, to the exclusion of goal, source, via, and other secondary directionals. The terms *directionality* and *configuration* are used in keeping with the theory proposed by Lestrade (2010), which builds upon earlier work by Kracht (2002; 2003; 2008). They correspond to the earlier notions of *Path and Place* (Jackendoff 1990) or *Vector and Configuration* (Talmy 2000).
vary in its complexity. Its full form is exemplified in (215), in which the brackets indicate elements that are not obligatory.

(215) Horhorho (shi) (diako) wáya
	hororo  (ʃi)  (dako)  wa:ya
	landform (head)  (top)  SRCL:TL
‘from (the top of) (the head of) the landform’

The spatial expression contains a Ground-denoting term, which can be a single noun (e.g., horhorho ‘landform’). The Ground-denoting term can form a possessive phrase with a relational noun specifying a part of the Ground (e.g., horhorho shi ‘head of the landform’). Whether simplex or complex the Ground-denoting expression can form a possessive phrase with a configurational noun (e.g., diako ‘top’) specifying the spatial relation (e.g., horhorho shi diako ‘top of the head of the landform’ or horhorho diako ‘top of the landform’). Finally, irrespective of its complexity, the phrase containing the Ground-denoting noun is followed by a directionality marker indicating the type of directionality—that is, how the spatial relation changes over time. Location directionality means no change (static location); goal directionality means change into a new configuration, while source directionality means change out of a configuration. In (215) above the source directionality marker was used (i.e. horhorho shi diako wáya ‘from the top of the head of the landform’). The spatial expression as a whole can function as an adverb to the predicate, as in (216).

(216) Horhorho diako wáya thurhibiswa.
	hororo  ʃi  dako  wa:ya  ti–qibiiswa
	landform  head  top  SRCL:TL  3Fb–roll.REFL
‘It rolled itself from the top of the head of the landform.’

In (216) the spatial expression encoding the source of motion functions as an adverb encoding the source of motion expressed by the reflexive verb ribisonon ‘roll oneself’. Alternatively, the spatial expression can be part of a stand-alone stative clause expressing the spatial relation between the Figure and the Ground. This is particularly common in the case of location directionality, one exponent of which is illustrated in (217)

(217) Horhorho diakonka no.
	hororo  ʃi  dakó–ŋ–ka=no
	landform  head  top–LOC.WHR–PFV=3Fb
‘It is at the top of the head of the landform’

The terms Figure and Ground refer to the entity to be located/its location (Talmy 1983), and are equivalent to the more recent Trajector and Landmark (Langacker 1987). The term Ground should not be confused with the noun ground ‘the horizontal level of the land’, which appears in the text as well.
In (217) the location directionality marker –n is used. When part of a stand-alone clause, the spatial expression is followed by a TAM marker (e.g., the perfective suffix –ka), forming a stative predicate. The subject of the predicate, encoding the Figure, can therefore be expressed by the personal enclitics. This schematic structure of the spatial expression is discussed in more detail below.

### 4.4.1.1 Relational nouns

Relational nouns are an optional element of the spatial expression, specifying the part of the Ground. The group includes mostly body part terms or forms derived from body part terms. However, many of them can be applied to parts of other entities, therefore the term relational noun is more felicitous. A few examples are given in Table 44 (see also section 3.6.5).

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>shi</td>
<td>head, top part (e.g., of people, animals, plants, landforms)</td>
</tr>
<tr>
<td>duna</td>
<td>arm, lateral part of entities (e.g., of people, animals, buildings, landforms)</td>
</tr>
<tr>
<td>doko</td>
<td>lap, convex part, bent part (e.g., of people, hammocks, landforms)</td>
</tr>
<tr>
<td>rhebo</td>
<td>edge (e.g., of tables, creeks, forests, savannas, landforms)</td>
</tr>
<tr>
<td>shibo</td>
<td>face, front part (e.g., of people, animals, buildings, landforms)</td>
</tr>
<tr>
<td>debo</td>
<td>part of the body immediately below the waist (e.g., of people, water features)</td>
</tr>
</tbody>
</table>

Relational nouns are inalienably possessed, and form a possessive phrase with the Ground-denoting term (e.g., horhorho boloko ‘tip of the landform’). The Ground can alternatively be expressed by a personal prefix attached to the relational noun. Since we are discussing nouns denoting inanimate entities (i.e. landforms), the 3rd person feminine prefix thu– will frequently be used. The vowels of the prefixes are often harmonized with the first vowel of the noun (e.g., thoboloko ‘tip of it’). A full noun phrase is used when a new Ground is introduced. In the case of answering a question about location, the Ground is normally expressed by a noun phrase, since it is new information. When talking about spatial relations concerning Grounds that are established in discourse, prefixes are preferred (e.g., within an elicitation task).

The possessive phrase with a relational noun can be followed directly by a directionality marker (e.g., horhorho boloko wâya ‘from the tip of the landform’). Alternatively, an optional configurational noun can be added (e.g., horhorho boloko diako wâya ‘from the top of the tip of the landform’). Some configurational nouns often co-occur with certain relational nouns, and the two can eventually become a lexicalized whole. The result is either a complex configurational noun, such as nakanroko ‘between’ (lit. ‘middle inside body’) or a complex relational noun such as rheroko ‘mouth’ (lit. ‘edge inside body’), both containing the configurational noun roko ‘inside body’. When the lexicalization process is complete, the first element of such possessive phrases can no longer be substituted with a personal prefix. This differentiates lexicalized phrases such as rheroko ‘mouth’ and nakanroko ‘between’ from phrases that are not lexicalized and can readily substitute
the possessor with a prefix (cf. horhorho boloko ‘tip of the landform’ and ihoboloko ‘tip of it’). In the following sections, the differential use of personal prefixes with possessive phrases serves as a measure of the lexicalization of landform expressions.

4.4.1.2 Configurational nouns

Configurational nouns are an optional, though frequent, element of the spatial expression—they encode the spatial relation that holds between the Figure and the Ground. A few examples of configurational nouns are given in Table 45 (see also section 3.6.4 for more examples).

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>diako</td>
<td>top; elevated part of an entity; secondary meaning ‘above’</td>
</tr>
<tr>
<td>khona</td>
<td>adhering; used when support is not by a horizontal surface; also ‘along’</td>
</tr>
<tr>
<td>rako</td>
<td>inside a liquid, typically water, but other liquids as well</td>
</tr>
<tr>
<td>ābo</td>
<td>under; used in the relative frame of reference (from onabo ‘ground’)</td>
</tr>
<tr>
<td>koloko</td>
<td>inside an unbounded container (e.g., rain, ash, fire), related to loko ‘inside’</td>
</tr>
<tr>
<td>bana</td>
<td>surface; usually a non-elevated surface</td>
</tr>
</tbody>
</table>

Configurational nouns (e.g., diako ‘top’) are inalienable nouns, and form a possessive phrase with the Ground-denoting expression, whether it is a single noun (e.g., horhorho diako ‘top of the landform’) or a possessive phrase with a relational noun (e.g., horhoroho shi diako ‘top of the head of the landform’). The possessor can be replaced with a personal prefix if it is known from the context (e.g., thudiako ‘top of it’). Configurational nouns can be divided into two groups: non-projective and projective (Herskovits 2009). Non-projective configurational nouns express notions of containment, contact, and proximity. Their semantics is predominantly spatial and they are sometimes glossed with English prepositions. The primary meaning of, for instance, īda loko with the configurational noun loko ‘inside’ is ‘the inside of a calabash’. A secondary reading ‘a calabash full of something’, as a mensural expression, is possible too. However, such non-spatial uses are rare, and are not salient to the speakers; hence the distribution of configurational nouns is largely limited to the spatial expression. Projective configurational nouns, on the other hand, are a small group of relational nouns that receive a spatial meaning when combined with the directionality marker –n encoding locations and goals (§ 4.4.1.3). Take as an example the noun shibo ‘face’. When combined with the directionality marker –n, shibon stands for ‘in front of’—a spatial region projected from the part, not a location on the part itself. Projective configurational nouns require the knowledge of how the spatial configuration is established—that is, whether a relative, intrinsic, or absolute frame of reference is used (Levinson 1996, 2003, Levinson and Wilkins 2006).
4.4.1.3 Directionality markers and the what/where distinction

Lokono has three primary directional distinctions—namely, location and goal, source, and via. I discuss here only the conflated location and goal directionality, which is central to the discussion of landforms that follows. There are two location and goal markers: the what-marker bithi and the where-marker –n. Both markers encode the location and goal directionality, disambiguated by the semantics of the verb. Motion verbs like òsun ‘go’ imply a goal reading; other verbs imply a location reading of the expression with the directionality markers. While the two directionality markers encode both locations and goals, they are sensitive to the semantics of the noun they are combined with (Rybka 2014b). The what-marker appears with person- and object-denoting nouns, as in (218), while the where-marker with place-denoting nouns, as in (219).

(218) Bôsa boyo bithi.
   b–o:sa b–oyo bitʃi
   2SGA–go 2SGA–mother LOC.WHT
   ‘Go to your mother.’ (Cassipora, 2013, natural discourse)

(219) Bôsa kabuyan.
   b–o:sa kabiya–ŋ
   2SGA–go field–LOC.WHR
   ‘Go to the field.’ (Cassipora, 2013, natural discourse)

The person-denoting noun oyo ‘mother’ in (218) is followed by the what-marker bithi, while the place-denoting noun kabuya ‘field’ in (219) appears with the where-marker –n. The reverse combinations are ungrammatical. Notice that the where-marker is a suffix, diachronically related to the free dative marker mun, while the what-marker is a free form. Each of the markers has also an atelic variant formed by adding the suffix –ro, namely bithiro and –nro, implying that the spatial configuration has not been fully reached. When we look at the combinatorial possibilities of the Lokono lexical items with the telic and atelic location and goal markers, a cline from person- to place-denoting terms appears. This cline is represented in Figure 12, in which check marks show possible combinations with the directionality markers.
Starting from the top left corner of Figure 12, person- and object-denoting nouns are characterized by their combinatorial possibilities with the *what*-marker *bithi*. They constitute thus the *what*-noun class, though there are slight differences within it. Person-denoting nouns allow both the telic *what*-marker (e.g., *boyo bithi* ‘at/to your mother’) and the atelic *what*-marker (e.g., *boyo bithiro* ‘toward your mother’). Nouns denoting physical objects can combine with the atelic *what*-marker (e.g., *ada bithiro* ‘toward a tree’), but not with the telic *what*-marker. Other nouns are characterized by their combinatorial possibilities with the *where*-marker –*n*, and thus constitute the *where*-noun category. Within this category there is some variation too. Relational nouns, projective configurational nouns, and proper place names combine with the telic and atelic *where*-marker (e.g., *Kasuporhin* ‘at/to Cassipora’ and *Kasuporhinro* ‘toward Cassipora’). Non-projective configurational nouns take the *where*-marker, but can also drop it if used in the telic mode. In other words, they can be unmarked in the telic location and goal directionality (e.g., *tholoko* ‘at/to the inside of it’). In atelic mode the *where*-marker is always present (e.g., *tholokonro* ‘toward the inside of it’). Finally, zero marking appears always on demonstrative adverbs (e.g., the medial demonstrative adverb *yara* ‘there’), unless they are used in the atelic mode, in which case the *where*-marker is still present (e.g., *yaranro* ‘toward there’).

The cline in Figure 12 spans thus from person-denoting nouns, through object-denoting nouns, to nouns denoting places, and finally to terms that have a purely spatial function that can no longer be classified as nouns (i.e. demonstrative adverbs). Nevertheless, two classes of nouns can be distinguished on the basis of

<table>
<thead>
<tr>
<th></th>
<th>What-category</th>
<th>Where-category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>person-denoting nouns</td>
<td>relational nouns, projective configurational nouns, non-projective configurational nouns, demonstrative adverbs</td>
</tr>
<tr>
<td><em>what</em>-marker telic</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><em>what</em>-marker atelic</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><em>where</em>-marker telic</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><em>where</em>-marker atelic</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>telic <em>where</em>-marker dropped</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
their directionality markers: what-nouns and where-nouns. The categories were labeled what- and where-noun, since the interrogative hama ‘what’ and halo ‘where’ also belong in the respective groupings. The distinction is also reflected in the anaphoric devices used to refer back to such nouns.

(220) Bôsa thibithi.
    b–oːsa  tʃi–biːʃi
    2SG–go   3F–LOC:WHT
‘Go to her.’ (Cassipora, 2013, natural discourse)

(221) Bôsa yon.
    b–oːsa  ʃō–ŋ
    2SG–go   LOC:ANPH–LOC:WHR
‘Go there (anaphoric).’ (Cassipora, 2013, natural discourse)

In (220), which is an equivalent of (218), the what-noun boyo ‘your mother’ is replaced by the 3rd person prefix attached to the what-marker. In (221), which is an equivalent of (219), the where-noun kabuya ‘field’ is substituted by a locative anaphoric adverb yo. Reverse combinations are ungrammatical.

Lokono has thus linguistic means to distinguish person- and object-denoting nouns from place-denoting nouns. This type of nominal classification manifests itself only in the spatial expression. In chapter 7 I show that switches between the two categories result in systematic changes reflecting the ontological features of the referents: what-marked nouns refer to more bounded entities and where-marked nouns refer to less bounded entities. The what/where distinction has therefore an ontological basis, and can also be observed in other languages; for a comparative study of the what/where dichotomy see chapter 8. As such, the distinction bears striking similarities to other types of nominal categorization (e.g., the mass/count distinction). It is against this dichotomy that we shall discuss landform expressions in order to see whether the language groups them with what-nouns or where-nouns.

4.5 Landform expressions

All Lokono landform expressions include the term horhorho ‘landform’. Diachronically, horhorho is a reduplicated form. Bennett (1989), who does not distinguish between the liquid phonemes written here as <r> (a tap/trill) and <rh> (a retroflexed apical flap), lists the non-reduplicated oró ‘sediment, grounds, deposit’ for the Guyanese dialect of Lokono. However, whether with or without the initial /h/, the non-reduplicated horho is no longer recognized as a meaningful unit by the

59 Convex landforms that are not the result of the general forces of nature but have an external cause can also be referred to with the inalienable noun horhoma, derived from the non-reduplicated root horho. A culturally specific but typical referent of horhoma is a heap of earth around a cassava plant, pushed up by the tubers growing under the ground, the presence of which indicates that the tubers are already large enough to be harvested.
Surinamese Lokono. Synchronously, horhorho is thus a simplex unanalyzable form in the Surinamese dialect.

The noun horhorho ‘landform’ can be used to refer to land features regardless of the level of granularity. Hence we can use horhorho to talk about the ground below one’s feet, a particular area, a country, and the world as a whole. In other words horhorho is insensitive to scale. Moreover, horhorho is unspecified for shape; it can refer to convex, horizontal, or concave landforms. It can also refer to plots of land. These can belong to people, which can be expressed linguistically through possessive phrases. When possessed, horhorho has an irregular form horhorha.

The noun horhorho can also be relativized to indicate particular types of landforms (e.g., wayaho horhorho ‘clayey landform’ with the noun waya ‘clay’ combined with a relativizer). However, horhorho cannot be used as a mass noun ‘soil’, as in ‘I bought some soil for my flowers’, which suggests that it is a set noun. This is evidenced by its compatibility with numerals, as in (222)—a stative clause, in which the noun phrase bian horhorho functions as the preposed subject of the stative predicate formed by a demonstrative adverb. The example is a description of a WITT stimulus, showing two hills.

(222) Bian horhorho yáka.
   biāŋ hororo yaː–ka
   two landform LOC.DEM.PR–PFV
   ‘There are two landforms here.’ (Cassipora, 2012, WITT)

In (222), horhorho combines directly with a numeral and is unmarked for number, which classifies it as a set noun. This example was used to describe a drawing showing two convex landforms (i.e. hills), but such combinations with numerals are also common when talking about plots of land. Syntactically, horhorho behaves like a typical set noun. It can function as the core argument of the verb, as in (223).

(223) Dōthika satho horhorho.
   d–oːtʃika sa–ʔo ho hororo
   1SG–find good–SBJ.REL:landform
   ‘I found a good landform (good land).’ (Cassipora, 2009, natural discourse)

In (223), horhorho is relativized by a stative verb combined with a relativizer, and functions as the object of the active verb oihikin ‘find’. It can also function as the Ground-denoting noun in a spatial expression, as illustrated in example (224), which is a description of the WITT stimulus as well, showing a hill with two trees on top of it.

(224) Danda orhorhonro, bian ada dashibonka.
   1SG–arrive landform–LOC.WHR–ATL two tree 1SG–face–LOC.WHR–PFV
   ‘I came toward a landform, two trees were in front of me.’ (Cassipora, 2012, WITT)
In (224), *horhorho* is part of a spatial expression with the atelic *where*-marker. The expression functions as an adverb encoding the goal of motion expressed by the verb *andun* ‘arrive’. The noun *horhorho* refers in this example to a convex landform again.

The question arises what are the combinatorial possibilities of *horhorho* within the spatial expression *vis-à-vis* the *what*- and *where*-markers. In what follows I examine how the noun behaves with respect to the distinction. I show that it is intermediate between object- and place-denoting nouns, though it is closer to the latter. First, *horhorho* combines with the atelic *where*-marker, as we saw in example (224) above. It can as readily combine with the telic variant. Interestingly, no land relief information is assumed in the expression *horhorhon* and *horhorhonro*, as there is no element specifying the shape of the referent of *horhorho*. Convex, concave, and horizontal landforms can be referred to with *horhorho*, and only the context disambiguates them, as shown in (225), which describes the scene presented in Figure 13 below.

(225) *Dirhibiswa orhorhonro, thudoko loko abaro bokotada de.*

\[
\begin{align*}
&1SG_A-roll.REFL.landform-LOC.WHR-ATL \\
&3F_A-\text{lap} \ \text{inside} \ \text{one} \ \text{hold=DIRCT=1SG_B} \\
&'\text{I rolled toward a landform, at the inside of its lap, one (tree) stopped me.'}
\end{align*}
\]

(Cassipora, 2012, WITT)

In (225), there are two spatial expressions functioning as adjuncts. First, we have the ambiguous *horhorhonro* ‘toward a landform’, which in example (222) referred to a convex feature. Second, however, we have the expression *thudoko loko* ‘at the inside of the lap of it’, with the configurational noun *loko* ‘inside’ zero-marked for telic directionality. The noun *doko* ‘lap’ refers to a concavity, and hence disambiguates the sentence, implying that in this case the referent is a concave landform. Examples such as (222) and (225) speak volumes for the fact that *horhorho* itself is unspecified for shape.
The examples shown until now demonstrate that horhorho combines with the where-marker, and is thus grouped with other where-nouns. However, horhorho can also combine with the atelic variant of the what-marker bithiro, as in (226).

(226) Dadukha aba waboroko horhorho bithiro.  
\[
\begin{array}{llll}
\text{da–dik’a} & \text{aba} & \text{waboroko} & \text{horho} & \text{bithi–ro} \\
\text{1SG.A–see} & \text{INDF} & \text{road} & \text{landform} & \text{LOC.WHT–ATL} \\
\end{array}
\]  
‘I see a road toward a landform (as an object).’ (Cassipora, 2012, MPM)

In (226) the what-marker implies the reading of horhorho as an object rather than a place. The consultants gave only two contexts, in which this phrase is felicitous, namely when talking about a landform in the distance or as a point on a map. This corroborates the idea that the what-marker is associated with more bounded entities, discussed in chapter 7. The phrase horhorho bithiro can be used to talk about motion toward a convex or a horizontal landform, but not toward a concave landform, probably because negative spaces are harder to think of as objects. However, the telic equivalent *horhorho bithi is unacceptable, as is the case with all object-denoting nouns (i.e. only person-referring nouns combine with the telic bithi).

The contrast between the two examples with the what- and where-markers is also visible in the anaphoric devices used to refer to the Ground in such clauses. Examples (227) and (228) are paraphrases of (225) and (226), respectively.
(227) Dirhibiswa yonro.
    d–ịgbiswa    yô–n–ro
    1SG–roll.REFL. LOC.ANPH–LOC.WHR–ATL.
    ‘I rolled myself toward there (anaphoric).’ (Cassipora, 2009, LEV)

(228) Dadukha aba waboroko thibithiro.
    da–dik’a    aba    waboroko    tʃi–bitʃi–ro
    1SG–see   INDF   road   3FA–LOC.WHT–ATL.
    ‘I see a road toward it.’ (Cassipora, 2012, MPM)

In the case of horhorho bithiro ‘toward a landform (as an object)’, horhorho can be substituted by personal prefixes but not by the locative anaphoric adverb yo. And vice versa, horhorho in horhorhonro ‘toward a landform (as a place)’ can only be substituted by the locative anaphoric adverb yo.

Summing up, the noun horhorho is insensitive to scale and shows features of both place-denoting nouns (where-marker) and object-denoting nouns (atelic what-marker). However, the where-marking is clearly the more natural choice, while the what-marking is restricted to specific contexts. The difference in use appears to depend on perceptual boundedness in keeping with the findings described in Rybka (2014b), discussed in chapter 7. The phrase horhorho bithiro can be used when talking about landforms in the distance or on a map—features that are visually more bounded. The expressions horhorhonro and horhorho bithiro can therefore be read as ‘toward an unbounded landform’ and ‘toward a bounded landform’, respectively. Summarizing, horhorho is intermediate between object- and place-denoting nouns, though it is closer to the latter.

4.5.1 Complex landform expressions

Having analyzed the grammatical features of the landform term horhorho, let us move to the complex expressions that include it. Horhorho can be combined with relational and configurational nouns into possessive phrases. The majority of these expressions are not lexicalized.60 Semantically, the possessed elements specify spatial features of horhorho by naming parts or configurations thereof. Every landform is therefore an instantiation of horhorho; this includes convex, concave, and horizontal landforms. Since many of these forms appear mostly, and sometimes exclusively, in spatial expression, and since we want to know which location and goal directionality marker combines with them, in Table 46 the directionality markers are given too.61 The symbol ⊙ in Table 46 means that the directionality

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60 The only exception is the lexicalized expression thushirima ‘headland’, in which the 3rd person prefix can no longer be substituted for horhorho. Its lexicalization is probably due to its link with the hydrological domain, which is of much more importance to subsistence strategies, and which shows a higher degree of lexicalization than landform terms.

61 In Table 46, I omitted the relational phrase horhorho debo ‘waist of landform’, which appeared only once in the data. Baarle et al. (1989) list horhorho debo as ‘valley’, but my consultants disagreed. Baarle et al. (1989) and Bennett (1989) mention also horhorho abo
marking can be dropped. The asterisk marks two relational nouns of verbal origin that were used only by one speaker. Additionally, relational nouns are given with the configurational nouns they usually combine with. The brackets indicate the configurational nouns that are not obligatory with the relational term in question (the combination doko loko ‘inside of the lap’ may be lexicalized). The Figure 1 in the online Appendix III shows the focal denotation of some of the terms given in Table 46, based on the Landform Coloring Task.

<table>
<thead>
<tr>
<th>Ground</th>
<th>Relational noun</th>
<th>Configurational noun</th>
<th>Location/ goal marker</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>horhorho</td>
<td>bana ‘surface’</td>
<td>–n/∅</td>
<td>landform’s surface</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>diako ‘top’</td>
<td>–n/∅</td>
<td>landform’s top</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>khona ‘adhering’</td>
<td>∅</td>
<td>landform’s slope</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>kosa ‘near’</td>
<td>–n/∅</td>
<td>landform’s vicinity</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>koboroko ‘among’</td>
<td>–n/∅</td>
<td>landform’s inside</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>nakanroko ‘between’</td>
<td>–n/∅</td>
<td>landform’s middle</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>ábo ‘under’</td>
<td>–n</td>
<td>below landform</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>yabo ‘behind’</td>
<td>–n</td>
<td>behind landform</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>shibo ‘in front’</td>
<td>–n</td>
<td>in front of landform</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>duna ‘beside’</td>
<td>–n</td>
<td>beside landform</td>
<td></td>
</tr>
<tr>
<td>horhorho</td>
<td>tola ‘depth’*</td>
<td>(khona) ‘adhering’</td>
<td>–n (–w/∅)</td>
<td>landform’s depth</td>
</tr>
<tr>
<td>horhorho</td>
<td>lama ‘slope’*</td>
<td>(khona) ‘adhering’</td>
<td>–n (–w/∅)</td>
<td>landform’s slope</td>
</tr>
<tr>
<td>horhorho</td>
<td>boloko ‘top’</td>
<td>(loko ‘inside’)</td>
<td>–n (–w/∅)</td>
<td>landform’s summit</td>
</tr>
<tr>
<td>horhorho</td>
<td>shi ‘head’</td>
<td>(diako ‘top’)</td>
<td>–n (–w/∅)</td>
<td>landform’s top</td>
</tr>
<tr>
<td>horhorho</td>
<td>anaku ‘middle’</td>
<td>(loko ‘inside’)</td>
<td>–n (–w/∅)</td>
<td>landform’s middle</td>
</tr>
<tr>
<td>horhorho</td>
<td>toro ‘heel’</td>
<td>(roko ‘in.body’)</td>
<td>–n (–w/∅)</td>
<td>landform’s heel</td>
</tr>
<tr>
<td>horhorho</td>
<td>rhebo ‘edge’</td>
<td>(khona ‘adhering’)</td>
<td>–n (–w/∅)</td>
<td>landform’s edge</td>
</tr>
<tr>
<td>horhorho</td>
<td>olabwa ‘side’</td>
<td>(khona ‘adhering’)</td>
<td>–n (–w/∅)</td>
<td>landform’s othr. side</td>
</tr>
<tr>
<td>horhorho</td>
<td>doko ‘lap’</td>
<td>loko ‘inside’</td>
<td>–n (–w/∅)</td>
<td>landform’s lap</td>
</tr>
</tbody>
</table>

With respect to the what/where distinction, the attested phrases horhorho headed by relational and configurational nouns behave like any other relational and configurational expressions. Relational nouns and projective configurational nouns (e.g., ábo ‘below’, yabo ‘behind’, shibo ‘in front’ duna ‘beside’) take the where-marking. Non-projective configurational nouns take the where-marking, but can also stand unmarked. This groups the complex landform expressions with other where-nouns—that is, nouns denoting places. Below, the relational and configurational landform expressions are discussed in detail (§§ 4.5.1.1 and 4.5.1.2, respectively). Following this discussion comes the analysis of a more idiosyncratic verbal strategy used to coin landform terms (§ 4.5.1.3).

‘mountain’, equally unacceptable to my consultants. Goeje (1928) gives also horhorho arima khona ‘along the shore’, where khona is a configurational noun meaning ‘adhering’ and arima is possibly derived from ari ‘tooth’.
4.5.1.1 Landform terms with relational nouns

Relational nouns specify a part of horhorho and form a possessive phrase with it. The phrases are not lexicalized since the possessor can be replaced with a personal prefix, as in (229), describing a hill with a solitary tree on top of it.

(229) *Abaro khan ada, tâ thobolokon kiba.*

\[
\text{aba–ro}^\text{1st} \text{Dim} \quad \text{ada} \quad \text{ta:} \quad \text{t}^\text{3f} \text{–bolok}^\text{1} \text{–\text{Dim} kiba}
\]

One–F=Dim tree far 3F–tip–LOC.WHR too

‘One little tree, far on the tip of (a landform) too’ (Cassipora, 2012, WITT)

In (229) the 3rd person prefix substitutes for horhorho, which is known from the context in the director matcher task revolving around horhorho. The expression thoboloko ‘tip of it’ indicates the very top of the landform (Figure 1 in the online Appendix III). The expression can be directly combined with the directional marker—the where-marker is used, whether telic or atelic. The speakers deemed the use of the what-marker ungrammatical.

Example (225) given here again as (230) contains, apart from the ambiguous spatial expression horhorho discussed above, also the relational noun doko ‘lap’.

The example shows that relational phrases, instead of combining with a directional marker, can also form a possessive phrase with a configurational noun specifying the spatial relation.

(230) *Dirhibiswa orhorhonro, thudoko loko abaro bokotada de.*

\[
\text{d–iq}^\text{1SG} \quad \text{orq}^\text{1SG} \quad \text{–ro} \quad \text{landform–LOC.WHR–ATL}
\]

\[
\text{t}^\text{3f} \text{–doko} \quad \text{loko} \quad \text{aba–ro} \quad \text{bokota=} \text{da=} \text{de}
\]

One–F=Dim inside one–F hold=DIRECT=1SG

‘I rolled toward a landform, at the inside of its lap, one (tree) stopped me.’ (Cassipora, 2012, WITT)

In (230) horhorho is combined with the atelic location and goal where-marker lending the general reading ‘toward a landform (as a place)’. The same geographic feature is also referred to by the 3rd person prefix on the relational noun doko ‘lap’. The meaning of doko requires the Ground’s main axis to be bent at an angle, but not necessarily in the vertical dimension. When combined with horhorho, doko indicates a bend in the landform, a foothill, or a valley (Figure 1 in the online Appendix III). The noun doko combines with the configurational noun loko ‘inside’, possibly forming a lexicalized whole (i.e. doko loko ‘inside of the lap’). The whole expression with horhorho is, however, not lexicalized since the possessor can still be replaced by the 3rd person prefix (e.g., tholoko ‘inside of it’). With respect to the what/where distinction, the expression (ending in a non-projective configurational noun loko ‘inside’) takes the where-marker, but can optionally drop it as in (230).

Combinations of a relational noun and a configurational noun can become lexicalized, as is the case with the already discussed nakanroko ‘between’—a combination of the relational noun nakan ‘middle’ and the configurational noun
roko ‘inside body’ (and possibly also with doko loko above). An example of a landform expression containing it is given below. Example (231) was used as part of the description of the stimulus in Figure 13 above.

(231) [...] aba kiba orhorho nakanrokhodi.
    aba kiba oʃo nakanroko-d'i
    ‘[...] one more, through the middle of a landform.’ (Cassipora, 2012, WITT)

In (231), which is a juxtaposition of the Figure and a spatial expression, the via directionality marker is used, causing the aspiration of the final /k/ of nakanroko ‘between’. The phrase orhorho nakanroko refers to what in English would be a valley. Importantly, due to the transnumeral nature of horhorho, horhorho nakanroko can refer both to the ‘middle’ of a single horhorho (vertical or horizontal) as well as the ‘middle’, or center, between two instances of horhorho (Figure 1 in the online Appendix III). In the case of horhorho nakanroko we can no longer substitute the relational phrases horhorho nakan ‘middle of a landform’ with a 3rd person prefix, since nakanroko is a fixed lexicalized configurational noun. However, this only tells us something about the history of the configurational noun nakanroko. The landform expression remains a non-lexicalized phrase with a configurational noun, since horhorho can be replaced by a personal prefix (e.g., thunakanroko ‘between them/in the middle of it’).

Two relational nouns were used less frequently with reference to landforms, namely shibo ‘face’ and duna ‘arm’. Though rare, they demonstrate an important feature of relational nouns—the fact that some of them can function as projective configurational nouns. The phrase horhorho shibo, for example, translates as ‘landform’ s front’, a relational phrase, exemplified in (232).

(232) Budukha to horhorho, firoka thushibo.
    bi-dik³a to horoʃo firo-ka t³i-ʃibo
    2SGA-see DEM/F landform big-PFV 3FA-face
    ‘Look at the landform, its front is big.’ (Cassipora, 2012, MPM)

In (232), the 3rd person prefix cross-references the noun horhorho. The expression thushibo refers a part of the landform (i.e. its frontal slope), and functions as the subject of the stative verb firon ‘big’. When used projectively, the noun shibo does not refer to a part but to a search zone projected from the part (i.e. ‘in front’). This meaning appears when shibo is followed by the where-marker, or when it is used in an empty verb construction with a posture adverb encoding a reciprocal spatial relation, as in (233).

---

62 Though scarce in my data, the combination horhorho shibo was apparently important enough to be noted in the Lokono-German dictionary, cf. hurruríssibu ‘the front side of the mountain, the surface of the mountain’ (Schumann and Schumann 1882a).
Kashibâko tha ma to abaro horhorho diakoka bianbe

‘They are in front of each other, but on top of this landform, there are two (trees)’ (Cassipora, 2012, WITT)

The reciprocal spatial construction consists of a spatial adverb derived with the adverbializer –ko from the noun shibo ‘face’ prefixed with the attributive prefix ka–. The English equivalent would be ‘in front of one another’ (notice that the final vowel of the configurational noun becomes an /â/ due to the presence of the adverbializer). The drawing that this sentence describes shows two elevations with their slopes facing each other. Each of them is conceived of as both the Figure and Ground—one landform is in front of the other. The Figure is not located on the part of the Ground but in an area projected from this part. Analogically, the term dunan ‘beside’ (from duna ‘arm’) projects a search zone at the side of the Ground. Expressions horhorho shibon and horhorho dunan are not lexicalized (i.e. horhorho can be substituted by the 3rd person prefix), and of course require the where-marker.

Summing up, the combination of horhorho with relational nouns results in the specification of a particular part of the landform. None of the relational terms found in these expressions is exclusive to the landscape domain; they appear readily with small-scale object-denoting nouns as well. However, the combinations of horhorho with relational nouns have only been attested referring to landscape entities, which may be a gap in the data. The attested relational phrases are not lexicalized—the possessor can be replaced with a personal prefix. Syntactically, relational nouns function independently of the spatial expression, as the arguments of the verb (e.g., (232)). When part of a spatial expression they combine with the where-marker, and are thus grouped with where-nouns denoting places.

4.5.1.2 Landform terms with configurational nouns

When the need to be more specific about the spatial properties of horhorho appears, it is possible to expand the spatial expression by adding a configurational noun. Configurational nouns can form a possessive phrase with a relational phrase containing horhorho as in example (230) above, or with the landform term horhorho itself as in (234) below, which comes from an instructional narrative about making a dugout canoe.

Horhorho bananda no, wathikada no.

‘When (a tree) is on the surface of a landform, we hollow it out.’ (Apoera, 2009, narrative)

In (234) horhorho bana is part of a dependent temporal clause formed by the suffixation of the event nominalizer to the spatial expression. It should be noticed that the where-marker is dropped in this example. The noun bana ‘surface’, being a
non-projective configurational noun, can stand unmarked in the telic location and goal directionality. The where-marker is obligatory in the atelic mode, which groups this expression with other where-nouns. The configurational noun *bana* ‘surface’ has the meaning of a two-dimensional planar area, especially one that is not raised, relative to the speaker. In the Landform Coloring Task, the speakers represented it as a horizontal line below the contour of the landform (Figure 1 in the online Appendix III). The phrase *horhorho bana* refers to any flat, not raised, part of the landform. The same expression can be used to talk about the ground below one’s feet, as in (234), as well as large-scale horizontal landforms—that is, plains, plateaus, and geographic areas (e.g., a country). The expression *horhorho bana* is used often for cleared areas such as the village fora (Figure 14). In the case of flats covered with vegetation, speakers would refer to the vegetation type rather than simply calling the area *horhorho bana.*

The configurational noun *diako* ‘top’, in turn, gives a convex reading. The noun *diako* describes configurations in which the Figure is on top of a three-dimensional Ground; hence the compositional reading of *horhorho diako* as a convex landform.

\[ \text{(235) Thurhiswa to orhorho diakon} \]
\[
\text{i–i}–\text{t} \text{biswa to ororo d}’ \text{akō–ŋ} \\
\text{3F–roll.REFL DEM.F landform top–LOC.WHR} \\
\text{‘(A ball) rolled to the top of the landform.’ (St. Rose de Lima, 2011, LEV)}
\]

The verb *rhibisonon* ‘roll oneself’, having no inherent directionality (cf. (225)), where the same verb appears), does not contribute to the spatial meaning. Interestingly, (235) is an example from the Event Triads stimuli that depicts small-scale objects. The same expression was also used to talk about large-scale convex.
landforms, and even islands.\textsuperscript{63} This shows that \textit{horhorho diako}, just like \textit{horhorho bana}, and in fact other configurational phrases with \textit{horhorho}, is insensitive to scale. It needs to be mentioned that in practice \textit{horhorho diako} is often exchangeable with \textit{horhorho bana}, the logic behind it being that the surface of a landform is often its top.

Another example of a configurational expression comes from the descriptions of drawings of a hill with a tree on its slope, given in Figure 15.

(236) \([\ldots]\) \textit{torabo orhorho khonanro, anaku loko.}
\textit{torabo orhorho khonanro, anaku loko}

\begin{verbatim}
to–ra–bo  oroiko  k’onâ–n–ro  a–naki  loko
DEMF–MED–CNTR  landform  adhering–LOC.WHR–ATL  EXPL–middle inside
‘[...] toward the non-horizontal part of that other landform, in the middle.’
\end{verbatim}

(Cassipora, 2012, WITT)

Example (236) is not a complete clause but a list of two spatial expressions, of which only the first one \textit{orhorho khonanro} with the configurational noun \textit{khona} interests us here. The noun \textit{khona} is a special configurational noun in that it always drops the where-marker in the telic directionality, as the combination \textit{khonan} is lexicalized and means ‘about, concerning’. However, the where-marker is present in the atelic mode, grouping this expression with other where-nouns.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure15.png}
\caption{Stimuli that elicited \textit{horhorho khona} ‘adhering to landform’}
\end{figure}

The configurational noun \textit{khona} expresses the idea of contact that obliterates horizontal support and foregrounds the idea of the adhesion of the Figure to the

\textsuperscript{63} Bennett (1989) and Goeje (1928) list \textit{kai} as ‘island’ or, as a place name ‘the island of Trinidad’. The speakers of Cassipora were only vaguely familiar with the term and if at all, used it with the meaning ‘round formation’, ‘a clump of bush in the savannah’ or ‘a clearing in the forest’. As a landscape term, \textit{kai} refers therefore to place defined as an absence in either the of the two main landscape features \textit{konoko} ‘forest’ (i.e. clearing) or \textit{karhow} ‘savanna’ (i.e. clump of bush).
Ground (by sticking, hanging, leaning, clinging, wrapping etc.). This inherent lack of horizontal support in khona gives the reading of a structure with a slope. If horhorho khona were used as a description of a horizontal scene, it would only be felicitous if the Figure were glued or otherwise attached to the surface of the landform, thus where it is not the Ground itself that provides support for the Figure. However, in the Landform Coloring Task, most speakers colored the whole outline of the landform when asked to mark horhorho khona, possibly due to the fact that its scope depends as much on the Ground as on the Figure, and the Figure was not specified.

Example (237), describing a scene where a creek passes through a valley, illustrated in Figure 13 above, demonstrates the use of two other configurational nouns, and the use of personal prefixes with configurational nouns.

Example (237) *To onikhan thokosa, thokoborokhodire ma balin.*

\begin{itemize}
  \item to υɲi–káŋ tä–kosa tá–koborokɔ–dɪ–re m–a balĩ–ŋ
  \item DEM:F rain–DIM 3F₃–near 3F₃–among–VIA–REST1 EXPL.–E.V pass–NMLZ
  \end{itemize}

‘It, the creek, is right through (the landforms), passing, near them.’

(Cassipora, 2012, WITT)

The first configurational noun kosa ‘near’ appears unmarked for directionality. The second, koboroko is combined with the via directionality marker –di that causes the aspiration of the /k/ in the configurational noun koboroko. The restrictive marker –re that follows necessitates a special syntactic structure with the empty verb o/a and the expletive prefix cross-referring to the Figure-denoting noun (onikhan ‘creek’). The noun koboroko expresses a type of containment. It is used when a multipartite Ground (e.g., human body) contains the Figure or when many exemplars of the same Ground (e.g., many people) surround the Figure. The configurational noun koboroko could therefore be translated as ‘inside its many parts’ or as ‘among many of them’, which goes hand in hand with the transnumeral nature of horhorho. As explained in section above in possessive phrases the possessor can be expressed with a prefix. Landform expressions with configurational nouns are no exception: horhorho can be substituted with the 3rd person feminine prefix when it is clear that the utterance is about horhorho (e.g., thokosa and thokoboroko in (237)). This applies to all attested configurational landform expressions.

Summing up, it should be stressed that all configurational nouns that appear with horhorho appear with object-denoting nouns (i.e. they are not specific to the landscape domain). The attested landform terms are not lexicalized. Semantically, these expressions do not name a landform per se, but rather a configuration of horhorho ‘landform’. Syntactically, most of them cannot be used as the arguments of the verb, and are thus limited to the spatial expression. The configurational landform terms combine with the where-marker, or stand unmarked in the location and goal directionality. They are thus grouped with where-nouns.
4.5.1.3 Landform terms with verbal forms

The relational and configurational expressions described in section 4.5.1.1 and 4.5.1.2 prevail in the data and are used by all speakers. The constructions described below are more idiosyncratic, but rely on the same idea—horhorho is a general landform that can be further specified. As opposed to the dominant strategies, however, the expressions discussed here use verbal instead of nominal forms.

In (238) an example of a landform expression containing an event nominalization, the structure of which was discussed in section 4.4, is given. Semantically, the landscape term horhorho in phrases with event nominalizations is a participant in the event lexicalized in the root. In (238), horhorho functions as the performer of the activity mudun ‘ascending’.

(238) Orhorho mudun diako to orharho.

ororo midə-ŋ d'ako-ka to oraro
landform ascendance above-PFV DEM cloud
‘The cloud is above the ascending of a landform.’ (St. Rose de Lima, 2011, BOWPED)

In (238) horhorho mudun ‘ascending of a landform’ is part of a spatial expression, followed by the perfective marker, forming a stand-alone spatial clause. Notice that in (238) diako has a secondary meaning ‘above’ (not ‘top’), and does not contribute to the convex landform reading. The place taken by the event nominalization in the spatial expression suggests it could be analyzed also as a relational term. It forms a possessive phrase with the Ground-denoting noun (horhorho mudun), which in turn functions as the possessor in a possessive phrase with a configurational noun (horhorho mudun diako).

By analogy, one can use the antonym of mudun ‘ascending’, namely thokodan ‘descending’ to talk about a convex landform (horhorho thokodan ‘descending of a landform’), as in (239), showing a tree on the bottom of a slope.

(239) Thothokodanin aba dinamâko ma kiba.

tʰo-tʰokoda-ŋ-ɬ-ŋ aba d'înama-ko m-a kiba
‘In the descending of (the landform), one (tree) is standing too.’ (Cassipora, 2012, WITT)

In (239) the event nominalization is prefixed with the 3rd person prefix referring to the landform and suffixed with the where-marker. The two affixes show that this type of landform expressions is not lexicalized, and is grouped with the where-nouns. Interestingly, horhorho mudun and horhorho thokodan, though based on antonymic verbs, have the same referent, namely the slopes, but viewed from

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64 This type of nominalization can appear also in dependent clauses. Therefore, horhorho mudun could be a complement of, for instance, the verb dakhun ‘see’ describing the fact of seeing a convex landform or the act of seeing a landform literally rise.
different perspectives (Figure 1 in the online Appendix III). If one moves up a slope it is called horhorho mudun, but if one moves down the same slope it is called horhorho thokodan.

When stative verbs are used, horhorho functions as the subject of the clause. In such expressions, horhorho does not participate in the activity but in the state lexicalized in the verbal root.

(240) Tora horhorho ayomunka ken ada thâbonka.
\[
\begin{align*}
\text{to-} & \text{ ra } \text{ ho} & \text{ horho ayom} & \text{-} \text{ka k}^\text{i} & \text{en} & \text{ ada} & \text{ t}^\text{b} & \text{-} \text{a} & \text{bô} & \text{-} \text{g} & \text{-} \text{ka} \\
\text{DEM-F-MED} & \text{ landform high-} & \text{PFV and tree 3F,} & \text{below-LOC,} & \text{WHR-} & \text{PFV} \\
\text{‘This landform is high and there is a tree below it.’ (Cassipora, 2012, WITT)}
\end{align*}
\]

In (240) horhorho functions as the subject of the stative predicate ayomunin ‘high’. Historically, the verb ayomunin is a directional phrase containing mun, the non-reduced form of the where-marker, which links this expression to the spatial expressions discussed in previous sections. The second part of (240) is a stand-alone spatial clause with the configurational noun ębo ‘below’ and a personal prefix referring to the landform.

Alternatively, stative verbs can be combined with a relativizer and used as modifiers of the landform term. We have already seen an example of that in (223), where the stative verb san ‘good’ was combined with a relativizer. In (241) we see an example of a stative verb ayomunin ‘high’ that encodes a spatial property.

(241) Abaro kho ayomuntho horhorho yâka.
\[
\begin{align*}
\text{aba-} & \text{ ro=} & \text{k}^\text{b} & \text{o ayom} & \text{-} & \text{t}^\text{b} & \text{ho} & \text{ horho ya=} & \text{ka} \\
\text{one-F=NEG} & \text{ high-SBJ.REL.F landform LOC.DEM.PRX-PFV} \\
\text{‘There are many high landforms here (lit. there is not one).’ (Pet 1987:298)}
\end{align*}
\]

The stative verb ayomunin ‘high’, combined with a relativizer, modifies the landform term horhorho, which functions as the subject of the stative predicate with the proximal demonstrative adverb yâ. The verb indicates that the landform is high. In other words, it conveys the meaning of a convex landform.

Summing up, whether convex or concave, landforms are again expressed as manifestations of horhorho, but this time as events (activities or states). Formally, the general landscape term horhorho can be combined with nominalized verbs and verbs combined with a relativizer, or function as the subject of the stative verb ayomunin ‘high’. Apart from containing verbal rather than nominal roots, these expressions differ little from those described in previous sections—they are based on the same landscape term horhorho and are not lexicalized. Syntactically, however, they have the advantage of allowing the landform expression to appear as the subject or object of the verb, a feature that the configurational forms lack. Although event nominalizations were attested with the where-marker, the scarcity of examples prevents us from drawing definite conclusions about the behavior of the verbal forms with respect to the what/where distinction.
4.6 Conclusions

The expression of landforms in Lokono relies heavily on the single set noun *horhorho* ‘landform’. It can be used on its own or in combination with relational and configurational nouns that specify a part or a configuration thereof. The landform domain is therefore based on partonymic and spatial relations. Occasionally, verbal forms such as event nominalizations, relative clauses, or stative verbs are used with *horhorho* as well. All the attested expressions are not lexicalized.

Both landforms and entities at a surveyable scale can be referred to with the simplex term *horhorho*, and the phrases with configurational nouns. The use of relational nouns with *horhorho* seems restricted to large-scale entities, but this might be a data gap that has to be investigated further. The expressions based on verb forms are too rare (in the context of my data) to draw any definite conclusions, but both large and small scale referents have been attested. Lack of scale-sensitivity with respect to landforms has been reported for other languages, for example, Yélî Dnye, an isolate language of Rossel Island, in which the term *mbu* can refer to a heap of sand or a mountain (Levinson 2008:261). The Lokono case is, however, different as scale insensitivity of *horhorho* and the configurational expressions extends to all landforms, not only to convex structures. This is particularly interesting in the light of the claims made by geographers, suggesting that scale is an essential factor setting geographic entities aside from other types of entities (Granö 1997). Most Lokono landform terms collapse the scale distinction.

Although evidence is inconclusive, according to some speakers, the expressions describing landforms are sensitive to the type of material they are made of. A few speakers insisted that landforms clearly made of stone should be referred to with expressions analogical to those described here containing the set noun *shiba* ‘stone’ instead of *horhorho*. The abstract line drawings, however, elicited only expressions with *horhorho*, although in principle the material was unknown. I also do not have any natural discourse data where *shiba* appears in landform terms. In the case of the color photographs, the speakers sometimes did pay attention to the material—they described certain landforms as a form of *horhorho* and commented, using simulative and comparative markers, that it looked like *shiba*. If material-sensitive at all, the *horhorho* expressions are clearly the default.

With respect to the what/where distinction, the simplex term *horhorho* escapes the classification we have established. It can be combined both with the what-marker typical of object-denoting nouns and the where-marker typical of place-denoting nouns. It forms a category of its own, and the choice of the marker depends on how perceptually bounded the referent is. The complex expressions with relational and configurational nouns are clearly grouped with where-nouns. The more idiosyncratic verbal constructions have been attested with the where-marker too. In Lokono, where a grammatical distinction exists between person- and object-denoting nouns, on the one hand, and place-denoting nouns, on the other, landforms are clearly grouped with the place-denoting nouns. It appears that in languages where the what/where distinction is grammaticalized, landform terms tend to pattern with place-denoting nouns (Cablitz 2008; Huber 2014). As predicated by semantic theory à la Lyons (1977), Lokono landform terms are therefore intermediate
between first-order nouns (such as ada ‘tree’) and place-denoting terms (such as Kasuporhi ‘Cassipora’).

In this chapter I looked at linguistic encoding of the landform domain in Lokono. I started from the claim that folk ontologies do not represent phenomena as fields (Smith and Mark 2003:416). In other words, humans do not represent landforms as a spatial distribution of attributes, but rather as objects identified in space. The linguistic evidence gathered in previous sections shows that this assumption is problematic. If Lokono landform terms encoded objects, then these objects would be at best a type of an intermediate object. More accurately, the complex landform terms are expressed as parts of and place on the single landform horhorho. This contrasts with, for example, English landform expressions, which are linguistically unrelated. The Lokono linguistic encoding of landforms can therefore be better represented as a field-based conceptualization, where each point in the space defined as horhorho can be given a nominal value from the set of relational and configurational nouns given in Table 46 above. To represent the Lokono landforms in an object-based model means neglecting the fact that each and every Lokono landform expression is in a paradigmatic relationship to each and every other landform expression. In other words, every landform is linguistically expressed as a nominal value of horhorho.

Though field-based models of landforms are widespread in geography, the representation of landforms as a function of horhorho with nominal values is a new challenge for geographic modeling, due to the semantic content of relational and configurational nouns. To give a few examples, bana ‘surface’ refers to large flats that are not elevated. However, as we move through landscape, what was the top of a hill to be climbed (horhorho diako) becomes a non-elevated flat (horhorho bana) once we are on top. The referent of horhorho bana and horhorho diako will therefore shift together with the perspective. Analogically, horhorho mudun and horhorho thokodan refer to the same geographic feature viewed from different angles. The former is used to describe the slope when ascending it, the latter when descending it. In a similar way, horhorho khona can refer in fact to any place on horhorho on the condition that the relation between the Figure and the Ground is such that it is not horizontal support that defines it. What type of configuration fits this definition depends both on the Figure and the Ground.

Many of the expressions described here are relative in a non-analogical sense. The Lokono model is sensitive to what the Figure is and where it is relative to the observer. The system itself (for the most part) does not distinguish between different scales of landforms, and on a higher level of generalization even neutralizes shape distinctions in the simplex term horhorho. It is the relation between the Figure and the observer with respect to horhorho, as encoded in the relational and configurational terms that provides the grid for partitioning horhorho. In other words, the way horhorho will be divided depends largely on what we want to locate and where we are. The non-lexicalized status characteristic of the domain goes hand in hand with this inherent perspectivism. Finally, it is also tempting to think of this system in terms of the physical features of the local landscape, which often prevents the observer from observing the changes of the relief. This may underlie the fluidity of the system; the shape of the land is often only visible in situ.
5. Vegetation terminology

Folk ecotopes highlight features of the landscape useful for people making a living off the land. Landscape is not a tabula rasa on which culture elaborates; rather, the relationship between land and classification or understanding of land is a feedback loop that takes in both the potential of the land and human ways of making a living, including human technologies, cosmologies, and knowledge systems.

Hunn and Meilleur (2012:3)

The dualistic view of nature and culture (or the land and the classification or understanding of land using Hunn and Meilleur’s words from the quote above) is an idea deeply imprinted on our everyday ways of thinking. So much so, that it is in fact employed to elucidate, for the layman, the very meaning of the French calque dualism in the Oxford Dictionary of English. The nature–culture divide also underlies, as Foley (1997) summarizes in his overview of anthropological linguistics, various theoretical models of culture, albeit it surfaces differently within the many frameworks. In spite of its apparent ubiquity, however, many, including Foley (1997), have taken issue with its usefulness for both theory and practice. Ingold (1992:39), for instance, points out the paradox of maintaining the dichotomy between the external biological (meaningless) environment and culture viewed as the source of all categorization; for if culture is the human form of adaptation to such an environment, it is “an adaptation to nothing at all, and to say that it is adapted is no more than to affirm that culture exists”. Equally problematic is the application of this dualistic view. Recent empirical studies in historical ecology in

65 I would like to thank the inhabitants of the Cassipora, Matta and Powakka villages who participated in the experiments reported here, particularly Mrs. Cecylia Biswane, Mr. Martin Purci, Mr. Lorens Jubimithana, Mr. Max Biswane, Mr. Josef Biswane, Mr. Niko Biswane, Mr. Antonius Sabajo, Mr. Erwin Sabajo, Mr. Hugo Sabajo and Mr. Cosma Makosie. I also want to thank Carolyn O’Meara for her invaluable help in working out the theoretical framework of the chapter and her comments on the first version of the introduction, and later the whole chapter. I also want to acknowledge the help of Ph.D. candidate Ewelina Wnuk, who assisted me with the first steps of the statistical analysis, and Dr. Eric-Jan Englund, who commented on the statistical methods used here. Finally, I want to thank Prof. C. Hägerhäll and Prof. Å. Ode Sang for sharing the results of the Lokono landscape preference experiment with me prior to the publication of the joint study. The research presented here was carried out within the project When “what” and “where” fall into place: the ontological status of place terms in Lokono, funded by the Netherlands Organization for Scientific Research (project number 322-70-005). Special thanks also go to Dr. Niclas Burenhult and his Language, Cognition and Landscape project funded by the European Research Council under the European Union’s Seventh Framework Programme (FP7/2007-2013)/ERC Grant agreement no. 263512), who provided me with a GPS device to the map of the ecotopic patches, and who put me in touch with Ph.D. Flurina Wartmann, with whom I have exchanged many ideas at the inception of this research.
the Amazon region—the geographic focus of this study—demonstrate how hasty Western science had been in judging what is “natural” in the first place. Heckenberger (2009) rightly recapitulates that large parts of what was considered pristine rainforest and savanna show clear and extensive traces of anthropogenic modification (e.g., Balée and Erickson 2006; Denevan 2002). Human ecology contributed to this discussion by showing that much of the biodiversity of certain areas is in fact maintained and even enhanced as the result of the interaction between the indigenous populations and their environment (e.g., Hornborg 2005; Posey 1985). Unfortunately, the nature–culture divide underlies also many decisions related to landscape management, development and policy, often detrimental to the local populations. The modernization process of the Amazon region, for instance, has been greatly shaped by the idea that the “empty” environment can be filled with “meaningful” infrastructure (Hecht and Cockburn 1989). Such theoretical and practical considerations undermine the simplistic idea of nature as “tabula rasa on which culture elaborates”, and are the point of departure for taking a different course, succinctly summed up in Hunn and Meilleur’s quote.

Instead of viewing the land and the classification or understanding of land as disparate worlds, a unifying account can be adopted originating in the writings of Gibson (1979). To him, the organism and its concomitant environment are involved in an ongoing mutual relationship, or a feedback loop in Hunn and Meilleur’s words. Paraphrasing Foley (1997:8), the organism responds to the inherent sensorimotor features afforded by the environment; the environment, in turn, is what the organism takes it to be through the sensorimotor apparatus. In each such loop, the organism and the environment codetermine each other. The process of categorization stands central in this reciprocity. Categorization, from this perspective, is “any systematic differential interaction between an autonomous, adaptive sensorimotor system and its world” (Harnad 2005:21). When an autonomous sensorimotor system categorizes, it abstracts from the afforded stimulus which kind of input systematically produces a given output. Foley’s (1997:8) pivotal example of the relation between an organism and its environment, inspired by the earlier work by Maturana and Varela (1987) and Varela et al. (1991), is the amoeboid movement. When the environment affords a food source, its presence brings on a change in the chemical composition of the environment that is registered by the amoeba’s sensorimotor apparatus, its membrane. This in turn prompts changes in the consistency of the amoeba’s protoplasm causing a part of it to extend toward the food source. As a result, the amoeba moves closer to it, eventually encapsulating and absorbing it. It is through the process of categorization that the organism learns—learning is the adaptive aspect of categorization.

The human being is, of course, not a protozoan, but a multicellular organism with a robust nervous system. Not only do we have a much more elaborate sensorimotor apparatus than an amoeba, which allows us to see, hear, smell, taste, touch, and manipulate objects, we have also greatly extended our sensorimotor capabilities through the development of a plethora of tools. As social creatures, our input is also enhanced by interacting with other humans; we can learn through observation, whether it is an unsupervised process or one supplemented with corrective feedback. Probably the most important evolutionary adaptation of our species is the development of speech, which allows us to learn not only through the
trial-and-error method grounded in sensorimotor experience but also through hearsay. We can be implicitly or explicitly told how to categorize an entity, without having to rely on detecting its properties through direct sensorimotor experience. In fact, much of the knowledge that we have accumulated through centuries is passed on by word of mouth, or its written equivalent. Importantly, however, the mechanism remains the same, as Foley illustrates with the example from the domain of ecological knowledge:

\[ \text{Knowledge and interaction are interdependent things. We know a plant as a weed by virtue of our cultural practices which remove unuseful plants; these cultural practices in turn lead us to label some plants as weeds.} \]

Foley (1997:21)

From this perspective, language and cultural practices are inextricably linked to each other as codeterminants. An important lesson to learn from the amoeba analogy is that language is the human chemical of choice, so to speak. Just like amoeba’s membrane has been tuned in to selectively detect chemicals signaling food sources, human language has been calibrated to coordinate actions socially, not merely to name things. The procedure through which this calibration occurs is the same general process of categorization described above. We abstract from the linguistic material afforded by others which kinds of input systematically produce a given output. This process starts early on; Clark demonstrated (Enfield 2008) that in the process of learning the meanings of words and linking words to their real-world referents, children are guided by their parents’ selection of contextualized uses. Enfield (2008) adds, following Brown (1958), that the process is never finished. In his study of the discourse in which Lao landscape terms are used, Enfield (2008) explains that we continue to calibrate our vocabulary as long as we live through continuous (linguistic) interaction with others. It is the result of this calibration that becomes “the (effectively) fixed and conventional semantic representations which linguists are in the business of describing” (Enfield 2008:248).

The study of words and their meanings in a given language should thus not be approached from the classic utilitarian perspective advocating that lexical categories reflect the affordances of the referents to the community of speakers (e.g., Hunn 1982). Words are useful in the first place as the chemical of choice itself—a means to escape the drudgery of having to learn every category through sensorimotor experience. We use words to communicate categories, and in the larger picture, to coordinate social actions. In other words, following Enfield (2008), the utility of words (as electric impulses in our social network), rather than the utility of their referents (as in the traditional utilitarian account), is the operative force behind the development of a lexicon. As such, the meaning of a word is a palimpsest of contextualized cultural and linguistic practices, rather than a direct reflection of the utility of the referents, just like Foley’s weed example shows. Our practices are in turn grounded in the external world embodied by our sensorimotor apparatus. In simple terms, the evolutionary advantage of language is not merely to categorize entities according to their affordances, but to be able to communicate the embodied categories to others in order to coordinate social actions.
The analysis of contextualized conversational data—that is, observing how people actually navigate spontaneous interaction with words—is therefore a good method for approaching semantics. Rephrasing Brown (1958:228), to apprehend the meaning of a word is to filter out from the linguistic input the invariance that allows one to form the right hypothesis about its semantic content. Unfortunately, in the case of critically endangered languages such as Lokono, which is no longer spoken on a daily basis, conversational data are scarce. This is particularly true for the domain of ecotopes in Lokono, the focus of this chapter, which has been greatly affected by language erosion. As a result, we have to turn to other methods in order to be able to “flesh out the labels with conceptual content”, as Enfield (2008:253) puts it. What is more, landscape has only recently come to the attention of linguists (e.g., Burenhult 2008b). This new strand of research is partly grounded in other, better-studied domains such as ethnobiology (e.g., Berlin 1992). Yet, cognitive geographers such as Smith and Mark (2003; 1999) warn us that geographic-scale features (e.g., forests) are profoundly different from subgeographic entities (e.g., trees) in terms of their ontological features (e.g., type of boundary). It is thus questionable whether established methodologies and theoretical assumptions from better-known domains of the subgeographic scale can be directly applied to landscape. As a result, this chapter is necessarily exploratory in its embodied anthropological framework transcending the nature–culture divide and its methodological toolkit combining techniques from ethnoecological and psychological research to shed light on the linguistic encoding of ecotopic vocabulary.

The focus of this chapter is the Lokono ecotopic terminology. Following Hunn and Meilleur (2012:16), ecotopes are defined as “the smallest ecologically-distinct landscape features in a landscape mapping and classification system”. Ecotopes are spatially realized as ecotopic patches, the tokens of ecotopes. In this chapter, I focus on a subdomain of ecotopes, namely ecotopes defined by the presence of a certain floral taxon.\footnote{A taxon is a taxonomic unit, such as a species, genus, or family. It should be kept in mind that the taxa recognized by the Lokono do not have to correspond one-to-one to scientific classifications. As far as we know this is not the case for the data reported here, though two of the taxa (beyokha and mokoro) could not be identified with certainty.} In Lokono, two suffixes, –wkili and –wkaro, are used to derive terms for such ecotopes. Take as an example awarhawkili ‘an area of the awarha palm’, or mokorowkaro ‘an area of the mokoro reed’. The aim of this chapter is to elucidate the semantic difference between the two naming strategies within the theoretical framework transcending the nature–culture divide and its methodological toolkit combining techniques from ethnoecological and psychological research to shed light on the linguistic encoding of ecotopic vocabulary.

As a result, this chapter is necessarily exploratory in its embodied anthropological framework transcending the nature–culture divide and its methodological toolkit combining techniques from ethnoecological and psychological research to shed light on the linguistic encoding of ecotopic vocabulary.
saturation can be useful in coordinating social actions (§ 5.3). As a way of closing the discussion, I summarize the findings (§ 5.4).

5.1 The Lokono language, society, and landscape

The Lokono people were traditionally semi-settled agriculturalists, whose main crop was khali ‘bitter cassava’. They also practiced hunting, fishing, and gathering. Their villages were located on the border of the tropical rainforest and savanna, usually in the vicinity of creeks and rivers, which used to serve as the main transportation network. The Lokono traditional beliefs were animistic in nature, and the medicine-man used to occupy the central position in the spiritual life of a village (e.g., Goeje 1943; Roth 1924; 1915). Today, however, most Lokono people have entered into the local cash economy, rendering the traditional subsistence practices less important. Transportation on land has become widespread, and the role of watercourses for subsistence practices (e.g., fishing) has diminished. The main creed today among the Lokono is Christianity, though some animistic beliefs are still popular. In general, the Lokono lifestyle today is less dependent on the local landscape (see Molendijk 1992; Rybka 2015a; VIDS 2008 for more details on the current socioeconomic situation).

The Lokono inhabit the peri-coastal areas of the Guiana Shield. The area is typified by grass and shrub savanna dominating the higher lying grounds. Dissecting these plateaus are numerous creeks and rivers (see Rybka 2015b for a discussion of Lokono landform terms). The valleys formed by these watercourses are the domain of the rainforest, large parts of which are seasonally flooded. The villages scattered across the Guiana Shield differ, however, in terms of the specific biotic and abiotic composition of the local environment, which, in some cases, has led to specialized exploitation of resources. The data reported here were collected in the district of Para, Suriname (see Figure 16), mostly in a hamlet called Cassipora, but also in Matta and Powakka (known in Lokono as Kasuporhi, Korhopa and Pwaka, respectively).
5.2 Lokono ecotope terms

The Lokono classify the vegetation around them in two categories: *konoko* ‘rainforest’ and *karhow* ‘savanna’, as well as into a number of smaller ecotopic patches that are the topic of this chapter. The ecotopic vocabulary was collected using a combination of methods. Some of the terms were first extracted from the digital corpus of Lokono narratives amassed by the author since 2009 (see the Archive of the Lokono Language at the Language Archive of the Max Planck Institute for Psycholinguistics in Nijmegen). The list was then enlarged through a free listing task, in which 18 speakers from Cassipora, Matta, and Powakka took part. Finally, a few transects through the Cassipora village territory were conducted in order to elicit more ecotope terms *in situ*, to get a better idea of the ecotopic patches themselves, and to collect their geographic coordinates using a GPS device. In total, 13 ecotope names were recorded. The list was then shortened to nine that were known to all ten consultants from Cassipora who participated in the three experiments described below. All ten consultants (nine men, one woman) were native speakers of Lokono, between 50 and 90 years of age.\(^\text{67}\) The experiments were

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\(^{67}\) Women in general were not willing to volunteer the data for these experiments, claiming that they are not experts on the topic. However, this may reflect generational or individual differences between female speakers; the one female included in the sample was...
conducted in Lokono, though a lot of code-switching took place (between Lokono and Dutch, the two languages the author and the participants have in common). Table 47 lists the nine ecotope terms familiar to the ten consultants, together with the Lokono names of plant taxa from which they are derived, and the Western scientific classification of their referents.  

**Table 47. Ecotope Terms and Their Derivational Bases.**

<table>
<thead>
<tr>
<th>Ecotope term</th>
<th>Lokono taxon</th>
<th>Western scientific classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>beyokhowkili</td>
<td>beyokha</td>
<td>unidentified taxon (Poaceae)</td>
</tr>
<tr>
<td>dakamawkili</td>
<td>dakama</td>
<td>Dimorphandra conjugata (Caesalpinaceae)</td>
</tr>
<tr>
<td>walabawkili</td>
<td>walaba</td>
<td>Couratari stellata (Caesalpinaceae)</td>
</tr>
<tr>
<td>korhwabanawkili</td>
<td>korhwa</td>
<td>Attalea sagotii (Arecaceae)</td>
</tr>
<tr>
<td>awarhawkili</td>
<td>avarha</td>
<td>Astrocaryum vulgare (Arecaceae)</td>
</tr>
<tr>
<td>itewkili</td>
<td>ite</td>
<td>Mauritia flexuosa (Arecaceae)</td>
</tr>
<tr>
<td>manakowkaro</td>
<td>manaka</td>
<td>Euterpe oleracea (Arecaceae)</td>
</tr>
<tr>
<td>tiritiowkaro</td>
<td>tiriti</td>
<td>Ischnosiphon arosum (Marantaceae)</td>
</tr>
<tr>
<td>mokorowkaro</td>
<td>mokoro</td>
<td>Ischnosiphon sp. (Marantaceae)</td>
</tr>
</tbody>
</table>

It should be mentioned that this is a surprisingly low number of plant-based ecotopic terms. Studies of other languages, including languages from the same family, documented four to ten times more items (see Table 48). It is quite likely that the small number of extant ecotope terms in Lokono is a reflection of the endangered status of the language. Another contributing factor may be the fact that the Lokono participate today in the mainstream economy, therefore the type and intensity of the interaction with the local landscape have changes, as described above.

familiar with all the ecotopes, and eager to discuss them. Her knowledge does not seem to differ from the other participants.

68 The scientific classification of Lokono taxa comes from a number of previous studies (Fanshawe 1996; 1950; 1948; Outer 2001; Patte 2011). I have tried to confirm these classifications, where possible, by discussing the features of the plants with the Lokono, and comparing them to the scientific descriptions. The plants reported here are for the most part well-known species, and there is little doubt about their classification.

69 In one case the base, from which the ecotope is derived, is complex itself. The term korhwabana ‘korhwa’s leaf’ consists of korhwa ‘Attalea sagotii’ and bana ‘leaf’. The ecotope korhwabanawkili ‘area of the korhwa leaves’ is thus derived from a noun denoting a part of the plant—a leaf used for weaving thatched roofs. This exception can be probably attributed to phonological restrictions.
TABLE 48.
PLANT-BASED ECOTYPE TERMS IN SIX AMAZONIAN LANGUAGES.

<table>
<thead>
<tr>
<th>Number of ecotope terms</th>
<th>Language (family)</th>
<th>Country (reference)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Kayapó (Ge)</td>
<td>Brazil (Posey 1985)</td>
</tr>
<tr>
<td>47</td>
<td>Matsés (Panoan)</td>
<td>Peru (Fleck and Harder 2000)</td>
</tr>
<tr>
<td>59</td>
<td>Takana (Tacanan)</td>
<td>Bolivia (Wartmann et al. n.d.)</td>
</tr>
<tr>
<td>69</td>
<td>Matsigenka (Arawakan)</td>
<td>Peru (Shepard et al. 2001)</td>
</tr>
<tr>
<td>89</td>
<td>Tsimane’ (Mosetenan)</td>
<td>Bolivia (Riu-Bosoms et al. 2014)</td>
</tr>
<tr>
<td>90</td>
<td>Baniwa (Arawakan)</td>
<td>Brazil (Abraão et al. 2010)</td>
</tr>
</tbody>
</table>

Interestingly, in spite of the quantitative differences, there are also qualitative similarities between Lokono and the other investigated languages. Wartmann and colleagues (n.d.) point out, for instance, that in the six languages listed in Table 48, palm trees are the most represented family. This is also the case for the Lokono data set, in which four out of nine plants that dominate the ecotopes belong to the family Arecaceae (see Table 47).

Figure 17 below gives the approximate locations of the major ecotopic patches in the Cassipora area. The ecotopic patches were either mapped with a GPS device during transects or, if not accessible due to seasonal flooding of parts of the forest, their approximate location was indicated on a large scale map by the inhabitants of the village. As mentioned before, not every village has access to the same ecotopic patches. In Cassipora, the patches of itewkili ‘ite area’ are in fact small, and the inhabitants regularly remark that itewkili is typical of Matta, one of the other two Lokono villages where data were collected. It is for this reason that some people visit Matta to collect ite leaves to make thishiri, a type of twine from which hammocks can be woven, or buy it ready from the inhabitants of Matta. Powakka in turn does not have a patch of beyokhowkili ‘beyokha area’, which is a place of special spiritual value, since the medicine-man’s flute used to be made from the beyokha reed (see also Izikowitz 1935; Mink 1992; Wright 2011). It is quite likely that these, and other villages once participated in a network of cultural exchange that reached far beyond the Para district and involved a number of exchanged items and ecotopes (see also Eriksen 2011).
It should be noted that participants in general named only one ecotopic patch per ecotope, which may be mistakenly taken to indicate that we are in fact dealing with proper names. This is, however, not the case; the nine terms are clearly generic, as evidenced by their combinatorial possibilities with collective marking, the indefinite pronoun, and numerals (see chapter 6). The one-to-one correspondence between ecotopes and their patches stems from the fact that the largest patches are the most important ones. The participants did confirm that there are also smaller patches of the nine ecotopes types, but they found them too unimportant to discuss or map them. This explains also why the ecotopic patches are all relatively close to the village—the Lokono concentrate their attention on the nearest, most accessible patches. It should also be noted, however, that some of the consultants are elderly people, who do not venture far into the forest anymore. The proximity of the patches may therefore also be attributable to the fact that the area from which resources are exploited shrinks as one becomes old. Notice that I do not mean to say here that the knowledge of ecotopes shrinks with age; as is usually the case with many domains of culturally-specific knowledge, it is the elders who seem most knowledgeable in the realm of ecotopes. I argue here only that the fact that the distribution of the ecotopic patches in close vicinity of the village may be a reflection of the fact that only elderly speakers—the knowledgeable ones, who cannot venture far into the forest—make use of the patches.
As far as the internal structure of the terms is concerned, the Lokono label the ecotopic patches using two types of terms—namely, nouns derived with the suffixes –wkili or –wkaro from a noun denoting a plant taxon. The two suffixes, though not analyzable from a synchronic perspective, share a common element –wkV, where the V is a vowel that might have been harmonized with the final vowel in the case of the suffix –wkili. The shared element is most likely a reflex of the suffix –wka, deriving stative verbs describing general features of an area, for instance, sawkan ‘sunny, pleasant’, bawkan ‘cloudy, unpleasant’, tibowkan ‘densely vegetated, unpleasant’ and mowkan ‘fully cleared from vegetation, open’; the final –n in these forms is a nominalizer typically used when giving the citation form of a verb. However, the suffix –wka cannot be added to plant-denoting nouns on its own; the two combinations, –wkili and –wkaro, are clearly lexicalized. The final elements of the suffixes are the masculine and feminine markers –li and –ro, respectively. The two types of ecotope terms function as nouns and denote areas; they combine with a specialized locative marker typical of place-denoting nouns (i.e. the where-marker, discussed in preceding chapters). With the exception of Wartmann and colleagues (n.d.), the studies mentioned in Table 48 do not focus on the linguistic features of the terms. As far as I know, there has been no mention of a differential derivational process in the literature on ecotopes such as the one described for Lokono in this chapter.

Traditional elicitation methods have failed to elucidate the meaning difference between the two types of derivational strategies in Lokono—the speakers were unable to formulate how the two types of ecotope terms differ. Most speakers, when asked directly about the difference, said that there is none. However, if I tried to switch the suffixes in order to coin a term such as *awarhowkaro, instead of the attested awarhawkili ‘area of the awarha palm’, a few people commented that awarha (Astrocaryum vulgare) does not grow like that. There was thus impressionistic evidence that there is a difference in meaning between the two strategies. In the absence of conversational data from which the semantic distinction could be abstracted, the experiments reported below aimed at bypassing this obstacle by approaching the meaning of the ecotopes from a different angle.

5.2.1 Experiment 1: perceived floristic composition

Since the participants’ impressionistic comments about the two suffixes touched on the type of vegetation found in the different ecotopes, the first experiment explored the Lokono knowledge of the floristic composition of each ecotope type. During individual sessions at a consultant’s house, each of the ten participants was asked to list plants that are typically found in each of the ecotopes.70 Importantly, I have thus not recorded the “real” floristic composition of the ecotopes (i.e. the real abundance of the taxa), but the picture thereof that the

70 The experiment did not revolve solely around plants. I have asked the consultants to list also animals associated with a particular ecotope, describe the features of the soil, and the uses of the resources found in each ecotope. These findings are, however, irrelevant to the present discussion.
inhabitants of Cassipora have, which is determined, on the one hand, by the real composition of the environment and, on the other hand, by the perceptual salience of the taxa (ultimately codetermined by the human sensorimotor system) and their cultural significance to the Lokono people (for subsistence practices, beliefs, etc.). This is an important assumption reflecting the theoretical approach adopted from the perspective of which the dichotomy of nature–culture is not relevant. Similar studies in landscape ethnoecology do acknowledge the problem of using free listing as a measure of abundance, but nonetheless tend to endorse it as such (e.g., Abraão et al. 2010:97).

5.2.1.1 Analysis and results

Altogether, the participants listed 52 plant taxa. The results were organized into an agglomerated table of 9 rows (cases=ecotopes) and 52 columns (variables=taxa), recording how many participants (out of ten) have associated a particular taxon with a particular ecotope. In order to investigate which ecotopes are similar in terms of the perceived floristic composition, I conducted a cluster analysis using Ward’s method in SPSS. Ward’s method compares the 9 cases across the 52 variables in order to generate a tree diagram (a dendrogram) visualizing the similarities between the cases. The result is given in Figure 18.  

Please notice that in Figure 18, Figure 19, and Figure 20 the term itewkili is written with a short <i> instead of the long <î> since I could not input such diacritics into the SPSS data sheet.
Figure 18 depicts the similarities between ecotopes in terms of the perceived floristic composition. The hierarchical cluster analysis using Ward’s method detected a number of clusters, and two major groupings, coinciding with the two derivational strategies for forming the names of ecotopes, the *wkili*- and *wkaro*-terms. The *wkili*-ecotopes are thus similar to each other in terms of the perceived floristic composition and different from *wkaro*-ecotopes (and vice versa), a finding in line with the participants’ impressionistic commentaries. Let us assume that the correlation between the perceived floristic composition and the linguistic expression is not accidental—that is, that the *wkili*-ecotope terms encode ecotopes different from *wkaro*-ecotope terms in a way that accounts for the perceived floristic composition. The question then arises whether we can identify a unique parameter explaining the observed distribution (as opposed to the 52 parameters used in this exploratory clustering experiment) that has motivated the Lokono grammatical distinction.

5.2.2 Experiment 2: similarity judgment (triads)

In order to investigate which unique parameter may underlie the grammatical distinction a second experiment was conducted exploring how similar the different ecotopes are to each other according to the Lokono. Eight participants were given a set of nine cards with ecotope names on them to sort through, and check if they feel knowledgeable enough to discuss all of them, and to make sure they had no
problems with reading the labels. Subsequently, I used a triadic comparison method, in which the participants were presented with one triad at a time, each consisting of three ecotope cards. For each triad the participants were asked to pick two ecotopes that were similar, and one that was the odd one out. The participants were explicitly instructed not to think about the labels (i.e. not to judge the linguistic form), but to think about the areas they denote and to exercise their freedom in which features of the areas to compare and prioritize (e.g., floristic composition, utilitarian considerations, aesthetic aspect, abiotic features of the area, etc.). Before the experiment started, a few trial triads were presented to make sure the form of the experiment was clear to the participants. Since a set of all possible permutations of cards would consist of 84 triads—a set too large to test with the speakers—a balanced incomplete design developed by Burton and Nerlove (1976) was used. This resulted in 24 triads, in which each pair of ecotopes appears twice. The triads were presented to the participants in a pseudo-random sequence to minimize order effects (see also an inspiring paper by Wnuk and Majid (2014), a study of the smell lexicon of a hunter-gatherer group in Thailand using similar methodologies).

5.2.2.1 Analysis and results

The similarity data obtained from the eight participants were organized into an agglomerated table recording how many participants have deemed each pair of ecotopes to be similar. The data was analyzed using the multidimensional scaling procedure (MDS) called PROXSCAL in SPSS. The MDS algorithm spatially models the numerical data, representing the reported similarity distances between the nine ecotopes, in order to detect how many dimensions best preserve the original distances in the data set, while reducing the number of dimensions. The maximum number of dimensions is the number of cases minus one—an eight-dimensional solution would perfectly fit this data set, but would not illuminate the results. MDS calculates the stress value for each of the eight possible dimensions—that is, how much the data needs to be distorted to fit a given dimensionality. Increasing dimensionality always results in lower stress. The best fit is the dimensional solution that results in a significant reduction of stress, while at the same time a further increase of dimensionality reduces the stress insignificantly. For the Lokono ecotopic data, a two-dimensional solution given in Figure 19 best preserves the similarity distances.

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72 I could not explain the rules of the experiment clearly enough to two elderly participant, therefore they were excluded from the sample.

73 Burton and Nerlove (1976) show that a balanced incomplete design, in which each pair appears twice, is highly reliable, as opposed to a set, in which each pair appears only once.

74 The stress value for a one-dimensional solution was .41, which is poor, but a two-dimensional solution reduces stress to .12, which is fair (see Kruskal 1964), but adding an additional dimension reduces stress only by 0.04. The Dispersion Accounted For (DAF), a measure of the variance accounted for, increases from .83 (one dimension) to .98 (two dimensions). Adding an additional dimension increases DAF only by .01.
Figure 19 visualizes the similarities between the ecotopes: the wkili-ecotopes, represented by dots, occupy mostly the right side of the space. The wkaro-ecotopes, represented by rhombi, are grouped closely together on the left, echoing the results of the cluster analysis in the first experiment. The MDS analysis shows that two dimensions best model the similarities between the ecotopes, but it does not tell us what these dimensions are—that is, we know that two parameters guided the participants’ similarity judgments, but we do not know what these parameters were. However, by looking at the distribution of the ecotopes in Figure 19 along the two dimensions we can hypothesize what the relevant parameter may be. Moving from left to right on the horizontal dimension 1, the ecotopes change from clearly wet (tiritiowkaro, mokorowkaro, manakowkaro, itewkili) to relatively dry (beyokhowkili, dakamawkili, korhwahanawkili, walabawkili), and to very dry (awarhawikili). The vertical dimension 2 is less straightforward. Moving from the bottom to the top, the ecotopes seem to change from less to more open type of vegetation. Clearly, however, it is the horizontal dimension 1 that correlates with the distribution of the derivational strategies—that is, on the vertical dimension wkili-ecotopes are all over

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Englund rightly points out that other statistical procedures could be used, for instance, the Principal Component Analysis, which could allow us to rotate the axes and look for a different, maybe better fit. For instance the ecotope terms could be organized into groups, formed by drawing a line more or less where along the diagonals in Figure 19. I have not attempted to try such an analysis, as the present distribution echoes the results form the first experiment.
the spectrum, while on the horizontal one, there is a cut-off point between the *wkili*- and *wkaro*-ecotopes. The question arises whether we can find supporting evidence for the observed distribution, and the hypothesized nature of the horizontal dimension.

5.2.3  Experiment 3: underlying parameters (pile sorting)

In order to corroborate the findings of the second experiment, a third experiment was conducted aimed at verbalizing the underlying parameters. The eight participants were given the same set of nine ecotope cards, and were asked to sort them into as many piles as they wished, on the condition that each pile includes only similar ecotopes. Similarly to the second experiment, the participants were explicitly instructed not to think about the names of the ecotopes and were free to make similarity judgments on whatever parameter they saw fit. This experiment, however, allowed the participants more freedom in creating the groupings, as opposed to the second experiment, in which the triads are predefined by an algorithm (see Burton and Nerlove 1976). The second experiment could have therefore distorted the picture (i.e. if a certain triad included three very similar ecotopes from which one nevertheless had to be eliminated). Having created the piles, the participants were asked to explain why certain ecotopes belong together in an attempt at verbalizing their similarity judgments.

5.2.3.1  Analysis and results

The similarity data obtained from the eight participants were organized into an agglomerated table recording how many participants have deemed a set (i.e. a pile) of ecotopes similar. The data was again analyzed using PROXSCAL in SPSS. For this set of ecotopic data, a two-dimensional solution given in Figure 20 best preserves the similarity distances.

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76 The number of piles created did not vary much, but as Englund points out the participants who created less piles had a bigger impact on the results.

77 The stress value for a one-dimensional solution was .38, which is a poor fit; a two-dimensional solution reduces stress to .15, which is a fair fit (see Kruskal 1964), but adding an additional dimension reduces stress only by .06. The DAF increases from .85 (one dimension) to .98 (two dimensions). Adding an additional dimension increases DAF only by .01.
Figure 20.—A two-dimensional solution produced by MDS analysis. The similarities between the ecotopes collected with the pile-sorting method (wkili-ecotopes are represented by dots, wkaro-ecotopes by rhombi).

Figure 20 echoes the results from the second experiment, though there are certain interesting differences. The wkaro-ecotopes, represented by rhombi, still occupy the left side of the space. However, manakowkaro ‘area of the manaka palm’ is now somewhat further from the other two wkaro-ecotopes, namely mokorowkaro ‘area of the mokoro reed’ and tiritiowkaro ‘area of the tiriti reed’. This can be explained by the fact that mokoro (Ischnosiphon sp.) and tiriti (Ischnosiphon aromum) are closely related taxa, hence their patches are likely to share many features. Spatially too, the ecotopic patches of mokoro and tiriti of the Cassipora area are not far away from one another, which can further add to their similarity score. On the other hand, manakowkaro ‘area of the manaka palm’ is now closer to itewkili ‘area of the ite palm’. Both manaka (Euterpe oleraceae) and ite (Mauritia flexuosa) are water loving palm trees (as opposed to reed species), which may explain the rearrangement. Interestingly too, the manaka was the only taxon in the set for which some participants agreed that both manakowkaro and manakowkili were acceptable terms. Patches of manakawkaro/manakowkili may well be a border case between the two types of ecotopes. Patches of itewkili are also characterized by a border case between wet, swampy areas, which is surprising considering that the relevant ecotope is derived with the suffix –wkili, not the –wkaro suffix. However, the question arises where the Lokono place their (culturally specific) cut-off point between wet and dry. Patches of itewkili are seasonally flooded, not wet all year round, which may be one relevant factor. Moreover, as opposed to patches of the three wkaro-ecotopes, patches of itewkili are found in the savanna (open vegetation) rather than in the forest (dense vegetation); it
may thus be the case that the second dimension plays a role here too. The limited number of extant ecotopes prevents us from solving this quandary. Summing up, except for minor differences, the third experiment corroborates the two-dimensional distribution form the second experiment.

When asked about the created piles, the participants named a few different parameters. In some cases two parameters per pile were named, in order to distinguish piles that shared a feature. The parameters named by the speakers were wet–dry (area), thin–thick (vegetation), open–closed (canopy), and close–far (from the village), of which the last two were used sporadically. As a rule, the participants also created one-member piles, in which they placed ecotopes that they deemed different from all the others; for these residual piles no parameter was named. The agglomerated scores for the two main parameters are given in Table 49, grouped by the two parameters and ordered vertically from wet to dry and thin to thick.

<table>
<thead>
<tr>
<th>Ecotope</th>
<th>Wet</th>
<th>Dry</th>
<th>Ecotope</th>
<th>Thin</th>
<th>Thick</th>
</tr>
</thead>
<tbody>
<tr>
<td>manakowkaro</td>
<td>6</td>
<td></td>
<td>korphabanawkili</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>mokorowkaro</td>
<td>6</td>
<td></td>
<td>walabawkili</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>tiritiowkaro</td>
<td>6</td>
<td></td>
<td>tiritiowkaro</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>itewkili</td>
<td>4</td>
<td></td>
<td>mokorowkaro</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>dakamawkili</td>
<td>1</td>
<td>1</td>
<td>itewkili</td>
<td></td>
<td></td>
</tr>
<tr>
<td>beyokhowkili</td>
<td>2</td>
<td>3</td>
<td>manakowkaro</td>
<td></td>
<td></td>
</tr>
<tr>
<td>korphawanwaki</td>
<td>4</td>
<td></td>
<td>dakamawkili</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>walabawkili</td>
<td>5</td>
<td></td>
<td>awarhawkili</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>awarhawkili</td>
<td>6</td>
<td></td>
<td>beyokhowkili</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

The wet–dry parameter was consistently used to distinguish the three wkaro-ecotopes from the rest, sometimes to the inclusion of itewkili with the wet ecotopes. Three ecotopes were usually considered dry (awarhawkili, walabawkili, korphawanwaki) and the remaining two (beyokhowkili and dakamawkili) were deemed neither particularly dry nor wet. It is however striking that the wet–dry parameter is the only parameter of the four named for which each ecotope was scored. Importantly too, the distribution of scores echoes the derivational strategies and the spatial distribution of the ecotopes in the conceptual space of Figure 19 and Figure 20. This lends further support to the hypothesis that the two suffixes, –wkili and –wkaro, are used to coin terms for areas differing in terms of water saturation, with wkaro-ecotopes encoding wetter areas.

The thin–thick parameter was clearly less important to the speakers, and served often as a secondary means of distinguishing ecotopes within a larger dry or wet pile. Though not perfectly, the thin–thick parameter partly aligns with the vertical distribution of the ecotopes in the conceptual space of Figure 19 and Figure 20. Interestingly, it may add to our understanding of some of the groupings noticed earlier. The ecotopes mokorowkaro and tiritiowkaro, which were represented as very similar in the similarity spaces (in both of Figure 19 and Figure 20), have been judged to be not only wet but also characterized by thin vegetation. Similarly,
korhwanawkili and walabawkili, which have been clustered together in all three experiments (Figure 18, Figure 19, and Figure 20), share both the feature dry and thin vegetation. Manakowkaro and itewkili, a clear cluster in Figure 19 were both considered neither thin nor thick, and on the whole quite wet. Finally, beyokhowkili and avarhawkili were both considered to be thickly vegetated, and indeed they occupy the very bottom of Figure 19 and Figure 20. Interesting is the case of dakamawkili, which was considered thickly vegetated once, though it actually occupies the very top of Figure 19 and Figure 20. This anomaly could be explained by the fact that dakamawkili was often left in a cluster of its own (and so was beyokhowkili for that matter). Moreover, it is also possible that I have misunderstood its categorization—dakamawkili indeed is thickly vegetated but not in the same way as, for example, beyokhowkili or avarhawkili. Instead of a thicket, dakama forms patches of savanna forest that are covered with a layer of half a meter of fallen leaves, making it hard to pass through it.

As additional evidence that the second dimension may be the density of vegetation, let me mention the results of another experiment, in which Lokono speakers participated, conducted in 2013 as part of a cross-cultural study of landscape preference. In this experiment, described in detail in Hägerhäll et al. (n.d.), a set of nine computer-generated images of landscape, carefully varied along two parameters, topography and the density of vegetation, was created (Figure 21). The two parameters were chosen since they recur in the theoretical literature as determinants of human landscape preference. Interestingly, notice that none of the images contains a water feature. Water was eliminated form the images since it was believed that it is too central to human landscape, and will thus only obscure the relationship between topography and vegetation density as parameters to be investigated.
The set was then organized into a complete set of pairs. The 25 Lokono speakers who participated in the study (12 men, 13 women) were asked to choose in each pair the image of landscape they preferred as location to live in. The design of the experiment, the analysis, the results of the Lokono data, and the cross-cultural comparison with five other populations are reported elsewhere (see Hägerhäll et al. n.d.). One aspect of the statistical analysis of the data is, however, of importance to this study. In Figure 21, we see that the nine images form three tiers with respect to the density of vegetation, and three tiers with respect to topography. The analysis of the responses showed that all three levels were significantly different to the Lokono speakers in the case of the density of vegetation. This independent finding suggests that the Lokono do pay attention to the density of vegetation when scrutinizing pictures of landscape. It is thus not surprising to see a reflection of that in the domain of ecotopes, in which the secondary dimension along which ecotopes have been classified, appears to be the density of vegetation as well.

5.3 Ecotopic distinctions in language and culture

Lokono ecotopic vocabulary, though most likely affected by linguistic and cultural change that prevents us from fully understanding its structure and meaning, shows a split into two groups of terms 

<table>
<thead>
<tr>
<th>Term</th>
<th>Open</th>
<th>Half open</th>
<th>Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td><img src="image1.jpg" alt="Image" /></td>
<td><img src="image2.jpg" alt="Image" /></td>
<td><img src="image3.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Hilly</td>
<td><img src="image4.jpg" alt="Image" /></td>
<td><img src="image5.jpg" alt="Image" /></td>
<td><img src="image6.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Mountainous</td>
<td><img src="image7.jpg" alt="Image" /></td>
<td><img src="image8.jpg" alt="Image" /></td>
<td><img src="image9.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>

Of these two, the
parameter of water saturation parallels the linguistic distribution of the two derivational strategies.

At the onset of this chapter, I have stated that ecotopic vocabulary does not simply reflect the utility of the referents but a complex network of relations between the landscape, human subsistence practices, and knowledge systems that codetermine one another. In light of this, the question arises what the benefit is, in terms of coordinating social action, of grammaticalizing a distinction between wet and dry ecotopes for the Lokono community of speakers. Generally speaking, Hunn and Meilleur (2012:3) hypothesize that the ecotopic distinctions maintained by a community “maximize the spatial predictability of local biotic and other resources”. Water itself is of course an important resource. According to Mark et al (2010:31), one of the founders of the discipline of ethnophysiography—that is, the study of culture-specific systems of landscape categorization—water occupies a central role in human landscape categorization, since it is “essential for human life” and has “especially distinctive affordances”. Mark et al (2010:31) continue that it seems therefore “highly likely that all cultures and languages pay attention to the ways in which water can exist in the landscape”. What they suspected thus is that all languages have terms for kinds of water features. Familiar languages such as English have a number of terms lexicalizing the degree of water saturation, for instance, bog, marsh, quag, fen, mire, swamp and so forth. It is thus not surprising in general that water saturation would be encoded as part of the ecotopic vocabulary, but to find it grammaticalized in the domain of terms for vegetation patches is a new insight—potentially peculiar to the Lokono language.

For the Lokono, taking into consideration their subsistence practices, it is crucial to know that an area is boggy, swampy, or potentially flooded for a period of time. Such areas cannot be easily traversed, which of course impacts the time of travelling from point A to point B, but also makes certain areas, including the areas lying beyond them, seasonally unreachable. Including the component of water saturation as part of the semantic content of the ecotope terms has obvious benefits. Interestingly, accessibility has been mentioned together with the thin–thick parameter as well. Ecotopes that were characterized as thickly vegetated are considered to be difficult to pass through. Beyokhowkili, which is a thicket of entangled bamboo-like shoots and one of the most densely vegetated patches in the sample, was regularly named as a place that is almost inaccessible. The Lokono never enter beyokhowkili, and only engage in subsistence practices (such as harvesting beyokha or hunting for animals nesting in beyokhowkili) at the very edge of the patch.

Availability of water is also a key factor in the swidden agriculture of cassava still practiced today on a minor scale, which requires a well-drained, sandy soil, more typical of the wkili-ecotopes. The same applies to pineapple, which is planted today in the villages for commercial purposes. Of the minor crops such as sweet potatoes, corn, sugar cane, peanuts, and taro, some require dry and some wet soil. Importantly, ecotopes such as korhwanarwakili, walabawkili, and awharkili were named by the speakers as good indicators of soils appropriate for cassava, potato, and corn. The wkaro-ecotopes, on the other hand, are considered inappropriate for any type of farming. Water saturation encoded in the ecotope vocabulary is thus also, to a certain degree, a predictor of soil types relevant to agricultural practices.
The grammaticalized distinction based on water saturation allows the Lokono to maximize the predictability of other resources as well. Certain wild plants necessitate a well-watered environment to prosper, while others require drier soils. Indirect evidence of the predictive power of the ecotopic suffixes comes from the first experiment. It is worth reiterating that the speakers consistently associated wkaro-ecotopes with certain exclusive plants not found in the wkili-ecotopes, and vice versa. Many of the plants found in the ecotopes are of great importance to the Lokono culture. In fact, most of the nine plants serving as the indicator species of the areas constitute resources central to the Lokono subsistence practices such as the building of a traditional thatched house (walaba, korhwa, manaka), the weaving of kitchen utensils (tiriti, mokoro, awarha), the gathering and preparation of food (awarha, manaka, ite, korhwa, dakama), and the manufacture of hammocks, clothes, and jewelry (ite, awarha). Listing the affordances of all of the 52 plant taxa volunteered by the speakers is beyond the scope of this chapter, but it should be stressed that there were hardly any for which no use was described by the speakers.

For the Lokono water has also spiritual affordances. According to the traditional system of animistic beliefs, landscape features harbor various spirits. Roth (1915) described the many types of spirits associated with mountains, forests, and water bodies known to the indigenous groups of the Guianas, including the Lokono. Of these, oriyo ‘water spirit’ (from ori oyo ‘mother of snakes’) — the spirit associated with water features — is the most important one, still feared and revered today by the Lokono (see also Goeje 1943). Today cultural practices related to oriyo and areas it inhabits include a restriction on approaching water features for menstruating women and young babies, restrictions on extracting resources from such areas, restrictions on travelling through such areas, and in certain cases even linguistic taboos substituting the name of the place with an avoidance term in order not to anger the spirit. Importantly, the boggy areas that are seasonally flooded by the distributary channels of the creeks, together with deep pools in the bends of creeks, are the places particularly favored by the oriyo type of spirits. The wkaro-ecotopes clearly fall into the first category. For obvious reasons, however, the consultants were not keen to discuss matters involving the oriyo spirit — it is in general not wise to mention or talk about oriyo at all. The few participants who did comment on the topic said that this type of knowledge used to be restricted to the medicine-men, hence they had but little to say about it.

With respect to language it is, however, interesting to observe that from a historical angle the grammatical difference between the –wkaro and –wkili suffixes may come down to the opposition between the feminine and masculine markers –ro and –li, respectively. Typically, the masculine gender is restricted to nouns referring to Lokono men, all other nouns are feminine, placing nouns denoting women, animals, inanimate entities, and the foreign researcher in the feminine category. It is thus somewhat surprising to find exponents of the masculine gender in ecotope terms. Importantly, however, under certain circumstances the masculine gender can be applied to nouns that do not encode Lokono men, namely in order to express familiarity, affection, or a good relationship in general. It is thus worth noting, especially in the face of the linguistic avoidance strategies used by the Lokono with respect to the oriyo, that employing the gender distinction to mark certain ecotopes as good by default could have been part of a larger system of practices related to the
interaction with the oriyo spirits. Wkili-ecotopes, possibly historically marked as masculine, denote drier areas where there is no danger at all of meeting an oriyo. This spiritual aspect of places is detached from their utilitarian aspect; both types of ecotopes are typified by culturally-important resources. Data limitations and cultural taboos, however, prevent us from ascertaining whether grammatical exponents of the masculine and feminine gender indeed served as a subtle beacon of warning.

5.4 Conclusions

Discourse data that could show us how the Lokono ecotopic vocabulary is used to coordinate social actions are not available due to the critical state of the language and culture. We cannot therefore directly observe how the utility of words, as electric impulses in a social network, directed the online usage of these terms, and their historical development as part of the lexicon (Enfield 2008). The picture is further complicated by the fact that methodologically the domain of landscape that I zoom in on here is still largely an uncharted territory, as opposed to better known semantic domains such as the human body, color terms, kinship systems, or the plant and animal kingdoms (e.g., Berlin 1992; Enfield, Majid, and van Staden 2006). Yet, by applying new experimental methods to landscape vocabulary, and subsequently placing the Lokono system within the broader picture of Lokono subsistence strategies and cultural practices, we can reconstruct, or hypothesize, how they were used and how they evolved.

In this chapter, I have specifically explored the semantic difference between two types of ecotope terms: wkilli- and wkaro-derivations. In the first experiment, free listed plants associated with each ecotope were clustered using the Ward’s method. The results showed that the two types of ecotopes differ in terms of the perceived floristic composition. The second experiment explored the similarities between the ecotopes through a triadic comparison method. The multidimensional scaling analysis of the results demonstrated that the similarities between the ecotopes could be comprehended in terms of two dimensions. In a third experiment, a pile-sorting method was employed in order to verbalize the speakers’ similarity judgments. It was concluded that the relevant dimensions are water saturation and the density of vegetation. The former parameter correlates with the linguistic pattern, and the latter has also been found to play a role in a landscape preference experiment conducted among the Lokono.

This semantic distinction is, however, meaningless when taken out of the Lokono context, for it is the Lokono subsistence strategies and cultural practices that give meaning to it in the first place. Returning to the quote from Hunn and Meilleur (2012), with which I started the discussion of Lokono ecotopic vocabulary, there is no doubt that the Lokono system of landscape classification described in this chapter collapses the distinction between nature and culture. The Lokono ecotopes clearly reflect the “potential of the land”, which in this case includes information not only about the particular taxon indicating the area but also about the relative water saturation of the ecotope. The “potential of the land” is, however, not an independent factor, but a reflection of the Lokono “ways of making a living”. The maintained system of ecotopic distinctions maximizes the spatial predictability of
plant resources that stand central to the cultural practices of the group—both the plants that indicate the area, and a number of other taxa that are consistently correlated with the two different types of ecotopes. The conspicuous utility of these taxa speaks volumes for the fact that the ecotopic classification does not merely reflect the biodiversity of the area. Rather it filters from it what the Lokono deem important. This applies also to water saturation encoded in the ecotopic vocabulary, which is an additional predicator of plant distribution, but also an indicator of soils appropriate for farming. It also provides clear clues as to the seasonal accessibility of certain areas. Moreover, the two types of ecotopic terms may have been entangled in the Lokono “cosmologies and knowledge systems”, functioning as subtle beacons of warning against certain types of spiritual beings. The wet *wkaro*-ecotopes are associated with the malevolent *oriyo* spirits. This may have been reflected in the linguistic form of the terms. Surprisingly, the dry *wkili*-ecotopes are marked by a masculine derivational suffix –*li*. The use of masculine gender with entities that do not denote Lokono men, normally implies familiarity, affection, or in more general terms a positive attitude toward the referent. It is thus possible that marking the dry ecotopes as masculine may have been a way of indirectly signaling that there is nothing to be afraid of there. It is also illuminating to notice that the Lokono living in the Cassipora village mapped only one patch of each ecotope, and that the neighboring villages complement each other in terms of the exploitation of the available resources. This stresses the fact that the ecotopic distinctions maximize the predictability of resources—only the nearest patch of optimal size is of importance. It is therefore the Lokono subsistence strategies and other cultural practices such as fishing, hunting, farming, gathering, travelling, sheltering, and avoiding interaction with malevolent spirits that imbue the Lokono ecotopic system of distinction in general, and the concept of water saturation in particular, with meaning. After all every ecotope in the Lokono landscape is statured with water to a certain degree. The Lokono distinction is thus clearly arbitrary, and is only meaningful for the very purpose of coordinating Lokono activities. The recent changes in the way the Lokono people interact with landscape have clearly affected the number and the transparency of the ecotopic distinctions maintained—the vanishing cultural practices go hand in hand with the vanishing ecotopic vocabulary, and ultimately the disappearance of the very ecotopes themselves, as their existence is inextricably linked to the Lokono language and culture. I hope that both the findings and the methodological setup will inspire other researchers to investigate the ecotopic vocabularies of indigenous groups and at the same time to refine the tools used here to study landscape classification from a linguistic angle.
6. Place names

As an object of linguistic inquiry, place names have received quite a lot of attention. The more traditional approaches have focused on the historical ties of place names and their role as repositories of linguistic and cultural heritage (e.g., Cameron 1996; Cassidy 1984; Fowler 2010; Herrick 1983; Hunn 1996; Rjabchikov 1998). Studies taking the sociolinguistic perspective have explored issues such as taboo names, nicknames, the standardization of place names, and the expression of power relations and identity through place-naming practices (e.g., Aikhenvald 1996; Dalberg and Jensen 2008; Gordón Peral 2013; Hendry 2006; Hercus and Koch 2009; Simpson 2001; Yong and Howe 2007). A number of studies have also explored the link between place names and their real-world correlates (e.g., Bohnemeyer et al. 2004; Boillat et al. 2013; Derungs et al. 2013; Lasker and Kaplan 1983; Nash and Simpson 2011; Sousa et al. 2010; Sweeney, Jurek, and Bednar 2007). Nevertheless, despite the continuous research and the variety of analytical angles, the study of place names has as yet not given us an answer to the question: do place names form a category definable on language-internal grounds?

In this chapter, I show that in Lokono place names can be defined by their grammatical behavior. On the one hand, place names are proper nouns—that is, nouns that “denote a unique entity at the level of established linguistic convention to make it psychosocially salient within a given basic level category” (Langendonck 2007:87). As such, Lokono place names are grammatically distinct from generic nouns in how they pattern with verbs of naming, the collective suffix, the indefinite article, and numerals—that is, they belong to the category of proper nouns. The basic level categories referred to by Langendonck are the types of features named, for instance, people, animals, ships, mountains, or rivers. In Lokono, the basic level categories are organized linguistically into what-nouns and where-nouns, distinguished by the type of directionality markers they combine with in spatial expressions. What-nouns include person-, animal-, plant-, object- and part-denoting nouns. The latter include nouns denoting spatial regions (e.g., diako ‘top’), structures (e.g., bahu ‘house’), landscape features (e.g., onikhan ‘creek’), and their parts (e.g., dako ‘tributary’). In Lokono, place names are therefore defined as proper nouns that denote a unique entity at the level of established linguistic convention to make it psychosocially salient within the category of where-nouns.

These findings are of particular relevance to the domain of onomastics. Linguistic studies of place names often lack an explicit definition of their scope. Some authors define place names as proper names referring to places. However, seldom do we come across a definition of the term place in onomastic studies. It is often assumed that the reader can rely on his or her intuitions, irrespective of the fact that the discussion of the concept of place has been continuing since Aristotle’s Physics (e.g., Cresswell 2006). Which entities receive place names is at best suggested by examples or lists of attested names. On the other hand, in the absence

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78 I use the term place name as an umbrella term for proper names of locations, including, for instance, toponyms and hydronyms.
of the definition of the concept *place*, other researchers have focused on the types of place names. Some authors have zoomed in on a particular type and its features, therefore not focusing on an overarching definition (e.g., David 2011). Alternatively, research has explored place-naming typologies, opposing one type to another (e.g., Tent and Blair 2011). The resultant typologies, reflecting the researcher’s intuitions about the semantic content of place names, do not provide a definition of the domain either. The existing typologies give us a picture of the types of meanings encoded in an *a priori* defined corpus of place names. Finally, there are linguistic descriptions which show that the characteristics of place names can be accounted for by the general architecture of the language (e.g., Nash and Mühlhäusler 2014). Such studies suggest that there is no class of place names, undermining the status of place-naming studies as a subdiscipline of onomastics in particular, and of linguistics in general. It is therefore of importance to balance such claims by showing that this is not necessarily the case in all languages. In Lokono, place names can be singled out from the rest of the lexicon on the basis of the their grammatical behavior. Moreover, the Lokono *what*/*where* distinction provides us with a language-internal definition of a place.

The remainder of this chapter is organized into two parts: a descriptive and an analytical one. The descriptive part starts with a short background on the data set used in the ensuing analysis (§ 6.1). I then give an overview of the features of Lokono place-naming practices. I first elaborate on the general features of Lokono grammar and the morphosyntactic make-up of place names (§ 6.2). I then comment on the way the Lokono interact with the local landscape and how this interaction is mirrored by the corpus of place names (§ 6.3). Subsequently, I describe the Lokono sociolinguistic context and show how it is reflected by language contact phenomena in the domain of place names (§ 6.4). Finally, I summarize the types of meanings encoded by Lokono place names (§ 6.5). This descriptive introduction showcases the sociolinguistic, referential, morphosyntactic, and semantic complexity of Lokono place names and provides a necessary background to the following analysis—a language-internal definition of Lokono place names based on their grammatical behavior as proper nouns and as *where*-nouns (§§ 6.6.1 and 6.6.2, respectively). This definition applies to all types of Lokono place names irrespective of their linguistic provenance, morphosyntactic make-up, the type of referent, and semantic content. By way of concluding, I show how the *what*/*where* distinction can help disambiguate expressions that can be understood as referring either to places or to other types of entities, and place the findings within the larger picture of place-naming studies (§ 6.7).

### 6.1 Data set

This study is based on a corpus of almost 180 place names. The data come from two types of sources: a collection of narratives recorded between 2009 and 2014 and a place name survey conducted in 2013 in three villages. Figure 22 shows the locations of the three settlements in the Para district, Suriname, where data were collected, namely Kasuporhi, Korhopa and Pwaka, officially known as Cassipora, Matta and Powakka, respectively.
The narratives contain a number of place names in a robust linguistic context, which allowed for a preliminary linguistic analysis. The survey, inspired by previous work by Bohnemeyer (2001b), expanded on this vocabulary, giving us a better picture of its sociolinguistic, referential, morphosyntactic, and semantic features. In total 16 men and 4 women were interviewed in three villages. All of them are native speakers of Lokono, also fluent in Dutch, the official language, and Sranantongo, the local lingua franca.

Two general tendencies are noticeable in the data. First of all, a few place names appear in more than one village territory. For instance, there is a creek named Urhikoro ‘The Dark One’ both in Cassipora and in Powakka, and a creek called Omadâro ‘Roaring One’ in both Cassipora and Matta. Such names encode the physical features of the place (such as color or sound) or its functional aspect (such as mooring place). Their recurrence may testify to what the Lokono find particularly striking or important—such as rapids, which are fairly rare in this part of Suriname (but commonplace in the South).

Secondly, individual knowledge of places varies to a certain extent even in small communities such as Cassipora, which counts fewer than 100 inhabitants. Usually people tend to know place names in a particular area around the village where they have fields or where they often go hunting or fishing. The etiology of place names in the case of event-based names also depends on the speaker. The name of a temporary camp called Nakora Bitonon ‘The Burning of Their Hammocks’ was
attributed to various incidents such as not putting out the fire before sleeping or the invasion of ant species that the people tried to fend off with fire.

6.2 Internal structure of place names

Lokono is a morphologically complex language with a tendency for suffixation and enclitization. As described in section 3.3.1, within the nominal domain, Lokono nouns are categorized as either masculine or feminine. Masculine gender is restricted to nouns denoting Lokono males. Feminine gender applies to all other nouns, including place names. The gender distinction manifests itself on demonstratives, 3rd person pronouns, and a number of suffixes that are also found in place names.

\[
\text{Wakhaitho kho shikwa to Kasuporhi.}
\]

\[
\text{wak}^\text{a}–\text{i}^\text{t}–\text{k}^\text{h}^\text{o} \quad \text{fikwa}–\text{hi} \quad \text{to kasipu}^\text{ri}
\]

\[
\text{bad}–\text{VERI}–\text{SBJ,REL:F=NEG} \quad \text{house.POSS–UNPOSS} \quad \text{DEM:F} \quad \text{Cassipora}
\]

‘Cassipora is a beautiful village.’

In (242), in which the demonstrative functions as a copula, the place name Kasuporhi is equated with a complex descriptive nominal phrase headed by the noun shikwa ‘village’, modified by a verb combined with a relativizer. Both the demonstrative and the relativizer are feminine, in agreement with the place name and the corresponding generic landscape noun shikwa ‘village’.

Lokono nouns are further either alienably or inalienably possessed (§ 3.3.3). Alienable nouns receive a possessive suffix when possessed, while inalienable nouns do not. In their unpossessed form, inalienable nouns require the unpossessed suffix –hV. This pattern is illustrated in example (242) above, in which shikwa appears without a possessor, therefore necessitating the unpossessed suffix. Inalienable nouns include kinship terms, configurational nouns, relational nouns, nominalizations, and a few other terms for culturally salient entities. There are also a number of nouns with suppletive possessive forms, for instance, kabuya/koban ‘field’. Place names contain quite a few inalienable nouns, for instance kori ‘bathing place’, banabo ‘camp’, or locative nominalizations in –nale, and less frequently nouns with irregular and suppletive possessed forms. A place name, which has the form of an inalienable locative nominalization is exemplified in (243).

\[
\text{(243) Nakodanale, yaranroki nakodâka.}
\]

\[
\text{na–koda–nale} \quad \quad \quad \text{ya–rā–ŋ–ro=ki}
\]

\[
3\text{PL,–weave.INTRV–LOC,NMLZ} \quad \text{LOC,DEM–MED–LOC,WHR–ATL=SPEC}
\]

\[
\text{na–koda–ka}
\]

\[
3\text{PL,–weave.INTRV–PFV}
\]

‘Nakodanale (lit. ‘Where They Weave’), it is around there that they weave.’

Example (243) explains the etymology of the place name Nakodanale—a locative nominalization derived from the introversive verb kodan ‘weave’—an area of the
forest dominated by korhwa palm (*Attalea sagotii*), the leaves of which are used for weaving a thatched roof. The possessor is expressed by the same prefixes that encode the subject of active verbs—that is, transitive verbs and intransitive verbs encoding actions. The prefixes are glossed here with the subscript \(A\) as opposed to personal enclitics encoding the object of transitive verbs and the subject of stative verbs—that is, intransitive verbs encoding states—glossed with the subscript \(B\). In (243) it is the 3rd person plural prefix that is lexicalized in the proper name. Importantly, there is no possessive suffix following inalienable nouns, including locative nominalizations.

Lokono place names exhibit some of these general characteristics. A great deal of attested place names contain deverbal nominalizations reflecting a general Lokono tendency for suffixation, while place names containing inalienable nouns include the grammatical possessor. Table 50 lists the attested morphosyntactic types that are discussed in detail below.

**Table 50. Morphosyntactic Types Attested in Place Names.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ratio</th>
<th>Example, referent, meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Univerbal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Monomorphemic</td>
<td>28%</td>
<td><em>Hoba</em>, creek, ‘tree species’ (<em>Spondias mombin</em>)</td>
</tr>
<tr>
<td>Analyzable</td>
<td></td>
<td><em>Mapana</em>, creek, etymology unknown</td>
</tr>
<tr>
<td>Unanalyzable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Polymorphemic</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Prefixed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(thu) ’3f’</td>
<td></td>
<td><em>Thurhebo</em> ‘It’s bank’</td>
</tr>
<tr>
<td>(na) ’3PL’</td>
<td></td>
<td><em>Nakodenale</em> ‘Their Weaving Place’</td>
</tr>
<tr>
<td>(wa) ’1PL’</td>
<td></td>
<td><em>Wakori</em>, resort, ‘Our Swimming Resort’</td>
</tr>
<tr>
<td>Suffixes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ro) ’f’</td>
<td></td>
<td><em>Madisero</em>, creek, ‘One Lacking Game’</td>
</tr>
<tr>
<td>(nale ‘LOC,NMLZ’</td>
<td></td>
<td><em>Nakodenale</em>, creek, ‘Where They Weave’</td>
</tr>
<tr>
<td>(koro ‘SPEC,F’</td>
<td></td>
<td><em>Urhikorale</em>, creek, ‘The Brown One’</td>
</tr>
<tr>
<td><strong>Compound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>konoko ‘forest’</td>
<td></td>
<td><em>Urhikoro Konoko</em>, forest, ‘Urhikoro Forest’</td>
</tr>
<tr>
<td>karhow ‘savanna’</td>
<td></td>
<td><em>Urhikoro Karhow</em>, savanna, ‘Urhikoro Savanna’</td>
</tr>
<tr>
<td><strong>Polyverbal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possessive phrase</td>
<td>34%</td>
<td><em>Dali Toro</em>, fishery, ‘Stump of the Dali Tree’</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

Starting from the top of Table 50, let us notice that almost all analyzable monomorphemic place names are nouns referring to species of flora encoding a salient botanical aspect of the location. Take as an example the hydronym *Korhobali*, a creek named after *korrhobali* trees (*Pentaclethra macroloba*) that grow
along the creek. 79 Monomorphemic but unanalyzable names, on the other hand, often deviate phonologically from the rest of the Lokono lexicon. Unanalyzable place names such as Mapana, Kasuporhi, Korhopa, Pwaka, or Shiparipabo contain the phoneme /pi/, which until the middle of the 19th century was part of the Lokono phoneme inventory, later becoming an /f/. This archaic phoneme is today found only in place names, borrowings, and a handful of other terms. Nota bene, Kasuporhi, Korhopa, and a few other unanalyzable place names are found on the oldest maps of Suriname (Bubberman and Koeman 1973), which is indicative of the time depth of the Lokono place-naming system. Analyzable place names show phonological changes typical of modern Lokono, for instance, Fodiarhan ‘Monkey is Finished’, containing fodi ‘monkey’ in its modern form, marking a chronologically newer layer of place names.

All suffixed place names are deverbal, but they differ in details of their semantics. The suffix –ro is a feminine marker typically attached to stative verbs encoding salient physical features of the environment. Madisero ‘One Lacking Game’, for instance, is a creek name derived from the stative verb madisen ‘lack game’, succinctly describing the area in the eyes of the locals. 80 The feminine specificity marker –koro, on the other hand, is found in place names that single out the referent from a larger class. Urhikoro ‘The Brown One’, for instance, is derived from the verb urhin ‘brown’. Since many creeks in Suriname are dark-water creeks (Hammond 2005), calling a specific creek urhiro ‘Brown One’ (with the suffix –ro) would seem to make little sense, but the name Urhikoro ‘The Brown One’ specifies that it is the particular brown creek important to the community. Finally, the nominalizing suffix –nale derives names of locations where an activity encoded by the base takes place. Nakubanale ‘Where They Rest’, for instance, is derived from the active verb akubun ‘rest, breathe’ and denotes a place where hunters used to take a break before returning to the village from longer hunting trips. The nale-nominalizations are inalienably possessed and hence require a grammatical possessor. They appear with the 3rd person plural prefix na–, referring to Lokono people only (the 3rd person feminine prefix thu– is used to refer to other ethnic groups). Interestingly, there are also place names with the 1st person plural prefix wa–, for instance, Wakori ‘Our Swimming Resort’, a type of kori ‘bathing place, resort’. It should be noted that both na– and wa– can encode Lokono actors. However, the 3rd person plural na-forms are places believed to have been named by the Lokono ancestors, while the 1st person plural wa-forms are all new coinages named by the contemporary inhabitants of the villages. The 1st person plural marker is not sensitive to the inclusive/exclusive distinction, therefore the 1st person plural can include also other ethnicities, which is interesting in that places containing it are swimming resorts catering for outsiders mostly. Nevertheless, the schism between

79 I am here not interested in the internal structure of words that is not part of the place-naming process—that is, I treat nouns like korhobali as simplex, even though the name of the tree is itself derived with the suffix –bali meaning ‘similar to’.

80 The stative verb madisen ‘lack game’ is a complex form related to kadisen ‘abound in game’. The two verbs clearly contain the privative and the attributive prefix, respectively, and the noun dise ‘game’ (Bennett 1989).
ancestral and modern place-naming strategies is again reflected in the linguistic material.

Compounds are frequent among the Sranantongo and Dutch place names that the participants listed for their territories, but compounding is not a common derivational process in Lokono, and is therefore only marginally attested in the domain of Lokono place names. Apart from a few idiosyncratic names, only compounds with konoko ‘forest’ and karhow ‘savanna’ as heads form a consistent group. In general, Lokono compounds are distinguished from possessive phrases by the fact that the head does not carry possessive marking (the respective possessed forms are konokora and korhowia). The modifying element in such compounds is another place name, with respect to which the place in question is located, for instance, Kasuporhi Karhow ‘Cassipora Savanna’ — a savanna located by the Kasuporhi creek. Alternatively, the modifier is a nominalized verb expressing an inherent feature of the referent, for instance, Wadikoro Karhow ‘The Wide Savanna’, derived from the verb wadin ‘wide’ with the specificity suffix –koro.

Interestingly, another compounding pattern is discernible in some of the partly analyzable place names. Take as an example river names Kamaw and Marhaw, the abbreviated versions of longer forms, fossilized in the official Dutch names of the two rivers, Commowijne and Marowijne, respectively. The element wijne is a reflex of the Lokono oni ‘rain’ in its non-possessed form, therefore excluding the possessive phrase interpretation. The ending is commonly found in river names across the three Guianas, obliterated by different official spellings (e.g., wijne, wini, oeni, ony, uni). Place names ending in winika—most likely a reflex of onikhan ‘creek’ (lit. ‘rain–DIM’) — constitute a rare subtype of such historic compounds, for instance, Kaswinika, a name of a small river. An interesting pattern emerges. The nouns konoko ‘forest’ and karhow ‘savanna’ are generic landscape terms used as heads in compound place names referring to large vegetation assemblages. It appears that names of larger landscape features that extend beyond the village territory were coined with the compounding strategy, whether they were vegetation features (with konoko or karhow as heads) or water features (with oni as heads). Smaller features within the territory, with which the inhabitants of the villages are more familiar have either monomorphemic or suffixed names—two strategies that rely heavily on the knowledge of the ecological properties of the place (e.g., the indicator species, other physical features of the environment, or historical events).

81 Inalienable nouns, which do not take possessive marking, are problematic—it is impossible in such cases to distinguish a possessive phrase, such as bahu loko ‘inside of the house’, from a compound on the basis of possessive suffixes. Yet, when possessed as a whole it is clear that such forms do not constitute compounds; the expected form of a possessed compound would be, for instance, dabahuloko (with the 1st person prefix). The actual form is dashikwa loko, with the possessed form of bahu, which shows that bahu and loko do not form a unit. The two cases considered as compounds also differ from the other place names in that they do not encode a part-whole relation, nor an ownership relationship, but rather the modifier locates the places with respect to another place. This is not the case for other expressions that lack morphological exponents of possession, but encode either an ownership or part-whole relation, and are therefore treated as possessive phrases with inalienable nouns.
Finally, possessive phrases include names headed either by a nominalized verb or a simplex noun—all of which are inalienably possessed nouns or nouns with suppletive possessed forms. The nominalizations are exemplified by *Yawahu Shimashimadun* ‘Recurrent Screaming of the Evil Spirit’, with the reduplicated nominalized form of the verb *shimakun* ‘scream’. Such place names end in the event nominalizer *–n* and refer to an event that took place, or keeps taking place in the above case, at the particular location. The event nominalizations, being inalienably possessed, require a grammatical possessor—the entity performing the event in question—expressed here not with a prefix but with a full noun phrase *yawahu* ‘evil spirit’, encoding the agent participating in the event. Possessive place names headed by a simplex noun include the following generic landscape terms: *shikwa* ‘house.POSS’, *banabo* ‘hut/camp’, *koban* ‘field.POSS’, *kabura* ‘fishery’, and *kori* ‘bathing place’. Alternatively, the head noun can be a relational noun referring to a part of a plant or animal associated with a place, for instance, *toro* ‘stump’, *daya* ‘trunk’, or *shi* ‘head’. Take as an example *Dali Toro* ‘Stump of a Dali Tree’, a fishery named after a *dali* tree (*Virola* species) that was felled there.

Finally, Lokono has no class of adjectives, hence no adjectival phrases are attested among the Lokono place names, but a few cases were found in the Sranantongo and Dutch names listed for the areas investigated, for instance, *Blakka Watra* ‘Black Water’—the Sranantongo name of *Urhikoro* ‘The Brown One’. A few hybrid and outright foreign phrasal place names follow a pattern in which the modifier encodes the size of the place relative to another place, for instance, *Klein Powakka* ‘Little Powakka’ or *Grote Simon Kreek* ‘Big Simon Creek’. This size-based model, only attested in Dutch or hybrid place names, appears to be a contact-induced phenomenon.

The morphosyntactic diversity of Lokono place names is interesting in as far as it reflects the general features of the language: the tendency for suffixation and the obligatory expression of the possessor with inalienable nouns. The presence of the archaic phoneme /p/ and the morphological exponents of the possessor additionally indicate the relative time depth of some place names. The vestiges of the compounding strategy point to an older underlying template: names of larger landscape features are compounded, while names of smaller local landscape features are mostly either monomorphic of suffixed forms—two strategies that rely on the knowledge of the physical features of the surroundings. Nevertheless, irrespective of the type of morphosyntactic structure, all place names pattern in the same way with respect to the proper/generic and the what/where distinctions (§ 6.6 below).

6.3 Overview of landscape features named

The territories of the three villages (Powakka, Cassipora, and Matta) represent similar ecosystems—the border zone between savanna and rainforest, dissected by numerous creeks. The Lokono traditional way of life, though inextricably linked to this landscape, is undergoing radical changes today, as the Lokono people become part of the fabric of the Surinamese society. This, in turn, has ramifications for place-naming practices. Table 51 gives an overview of the types of the referents attested most frequently, the significance of which is discussed below.
Although river names form only a minor portion of the data (since I have focused on the microtoponymy of the villages), it is interesting to notice that the simplex generic term *oni* ‘river’ (lit. ‘rain’) is not often used. Instead of a generic noun in Suriname the proper names of rivers or the descriptive term *barhâ dako* ‘tributary of the sea’ are often used when talking about the largest waterways in the country. The form *oni* is nevertheless found in many partly analyzable river names as discussed above (§ 6.2). Moreover, the term *onikhan* ‘creek’ (lit. ‘rain—DIM’) forms a size-based pair with the noun *oni* ‘river’.

As will already be clear from the examples given so far, hydronyms are the most numerous group among Lokono place names—a reflection of the cultural salience of water features (e.g., Goeje 1943; Renselaar and Voorhoeve 1962; Roth 1929). However, the importance of water bodies is decreasing today. Creeks and rivers used to function as a transportation network connecting the different villages. Today roads are used instead, the names of which, nevertheless, still reflect the significance of waterways. The possessive place name *Tomorero Waboroko* ‘Road of the Bitter One’, for instance, is named after the *Tomorero* creek, to which it leads (derived in turn with the suffix –*ro* from the stative verb *tomoren* ‘bitter’). Hand-operated water pumps and rainwater tanks are present in all villages, rendering natural springs called *shiroko* less and less important. Traditional bathing places called *kori*—a private stretch of a creek cleared from vegetation—are becoming a thing of the past too. A few historically important bathing places still have names, for instance, *Semethimi Kori* ‘Bathing Place of the Late Medicine-Man’, a possessive phrase with the noun *semethi* ‘medicine-man’ as possessor, modified by the suffix –*mi* meaning ‘deceased’. However, the noun *kori* is today also applied to swimming resorts catering for tourists, for instance, *Remi Kori* ‘Remi’s Swimming Resort’. The Lokono villages, called *shikwahu*, used to be connected by a network of trails called *bunaha*, many of them leading to fields or hunting grounds. Only a few names of such trails have been recorded, most of them of Sranantongo origin, containing the Sranantongo equivalent of *bunaha*, namely *pasi* ‘trail’. The trail *Sedre Pasi*, for

<table>
<thead>
<tr>
<th>Referent type</th>
<th>English meaning</th>
<th>Ratio</th>
<th>Example, meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>onikhan</td>
<td>creek</td>
<td>40%</td>
<td><em>Korhobali</em> ‘tree sp.’ (<em>Pentaclethra sp.</em>)</td>
</tr>
<tr>
<td>shikwahu</td>
<td>village</td>
<td>8%</td>
<td><em>Korhova</em> (unanalyzable)</td>
</tr>
<tr>
<td>kabura</td>
<td>fishery</td>
<td>7%</td>
<td><em>Shimodo Kabura</em> ‘Eel’s fishery’</td>
</tr>
<tr>
<td>bunaha</td>
<td>path</td>
<td>5%</td>
<td><em>Basari Bunaha</em> ‘Path of the Kari’na’</td>
</tr>
<tr>
<td>karhow</td>
<td>savanna</td>
<td>5%</td>
<td><em>Mopenti Karhow</em> ‘Mopenti Savanna’</td>
</tr>
<tr>
<td>kori</td>
<td>bath</td>
<td>4%</td>
<td><em>Peter Kori</em> ‘Peter’s Bathing Place’</td>
</tr>
<tr>
<td>konoko</td>
<td>forest</td>
<td>3%</td>
<td><em>Omadaro Konoko</em> ‘Omadaro Forest’</td>
</tr>
<tr>
<td>akubanale</td>
<td>resting place</td>
<td>2%</td>
<td><em>Olbo</em> ‘tree sp.’ (<em>Trattinnickia spp.</em>)</td>
</tr>
<tr>
<td>waboroko</td>
<td>road</td>
<td>2%</td>
<td><em>Anakhu Waboroko</em> ‘Inner Road’</td>
</tr>
<tr>
<td>rhebo</td>
<td>bank</td>
<td>2%</td>
<td><em>Thurhebo</em> ‘Bank of (the creek)’</td>
</tr>
<tr>
<td>banabo</td>
<td>camp</td>
<td>2%</td>
<td><em>Dorhi Banabo</em> ‘Camp of the Maroon’</td>
</tr>
<tr>
<td>oni</td>
<td>river</td>
<td>2%</td>
<td><em>Sorhinama</em> (unanalyzable)</td>
</tr>
<tr>
<td>other</td>
<td>other</td>
<td>18%</td>
<td></td>
</tr>
</tbody>
</table>
example, is named after sedre ‘cedar’, the Sranantongo name of Cedrela odorata tree, exemplars of which flank the trail.

Places associated with subsistence practices are also slowly disappearing. Hunting and fishing have today lost their status as subsistence practices in most households. Hence, the number of designated fisheries called kabura has decreased. Such fisheries were often given a phrasal proper name indicating the most likely catch, for instance, Karhiwaro Kabura, named after Hoplosternum littorale, an armor-plated species of catfish. Places are rarely named after birds or mammals, since these are not as easily associated with a particular location according to the speakers, but there are exceptions, for instance, Anwana Balutadan ‘Sitting Vultures’—a place where vultures come to drink water. Gathering resources in the forest and on the savanna is today rarely practiced, and the relevant ecotopes are usually not named by proper names but by generic ecotope nouns (chapter 5). However, large stretches of forest and savanna do bear proper names, such as Urhikoro Konoko ‘Urhikoro Forest’. These are consistently compounds, naming the vegetation assemblage after a nearby creek, in this case Urhikoro ‘The Brown One’.

The Lokono still practice non-mechanized swidden agriculture on their fields called kabuya (irregular possessed form koban)—a term applied also to old plantations such as Yorhi Koban ‘Tabaco Plantation’. Temporary outfield camps called banabo used to be set up around such fields in times of harvest, but only a handful of them, those set up by extraordinary figures who have impressed themselves on the community’s memory, have names, for instance, Dorhi Banabo ‘Maroon’s Hut’.

Changes have also affected the immaterial culture. Though Catholicism has gained fertile ground, traces of Lokono animistic beliefs are still part of daily life. They are particularly visible in the different practices related to the water spirit orio (from ori oyo ‘mother of snakes’). It is, for instance, forbidden for menstruating women, babies, and their mothers to come close to the creeks, since orio may harm them. Such beliefs are strong enough to be translated into Dutch as part of the rules and regulations of Lokono swimming resorts in order to make sure that visitors do not fall prey to malevolent spirits. Figure 23 below is a photograph of the rules and regulations that the inhabitants of the Cassipora village have formulated. These regulations are enforced at the swimming resort at the Urhikoro creek, known as Blakka Watra in Sranantongo, which passes in the vicinity of the village.
In order not to anger the water spirits of the creeks that are considered particularly potent, an avoidance place name Thusakho (lit. ‘It Has No Name’) is used at the location instead of the official name. I have attested only three such creeks, all in the Cassipora area. Interestingly, all three creeks are considered particularly good hunting grounds, and strict restrictions are placed on hunting and fishing practices in such areas—a phenomenon comparable to the ecological management practices behind the concept of the master of animals of the Tukano people described by Reichel-Dolmatoff (1987). In Cassipora itself, there is also a place called Norwanale, which is clearly a locative nominalization of the reflexive verb oronwan ‘fast’, translating as ‘Where They Fast’—a location where the hut of the medicine-man used to be located. Few people felt comfortable discussing this location, and its name is not transparent to the speakers today or it is not culturally acceptable to discuss its meaning. Most people avoid the place and attribute family feuds, failed business investments, and nightmares to accidental interaction with the location (e.g., passing through it or cutting open a field nearby).

It should be pointed out that the referents of the Lokono place names vary from small spaces of a couple of square meters (e.g., bathing places) to large areas (e.g., stretches of forest). Interestingly, I have not attested any place names referring to landforms (e.g., hills, gullies, but see chapter 4 for the discussion of the generic landform expressions). Most place names refer to water features, including some village names, names of old settlements, and large vegetation assemblages that are
called after nearby water features. Nevertheless, all place names, irrespective of the type of referent, pattern in the same way with respect to the proper/generic and the what/where distinctions (§ 6.6 below).

6.4 Sociolinguistic features of place names

In Suriname, most Lokono people speak Sranantongo, the local creole lingua franca, and Dutch, the official languages of the nation-state, while only the elderly use Lokono. Creole languages have been used by the Lokono in contacts with the colonizers at least since the 19th century (Baarle 1999; 1995; Robertson 1987). The intensification of these contacts started in the 20th century with the establishment of Roman Catholic missions, stimulating language shift toward Sranantongo, and later Dutch. Furthermore, the Lokono Surinamese territories form a network of loosely connected pockets, intermixed with areas settled by a linguistically unrelated Amerindian group—the Kari’na people speaking a Cariban language. The attested place names reflect the sociolinguistic trends in the community—there are both Amerindian and Non-Amerindian names in the corpus. Table 52 gives a quantitative overview of place names by linguistic origin.

<table>
<thead>
<tr>
<th>Provenance</th>
<th>Ratio</th>
<th>Example, referent, meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amerindian</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>- Lokono</td>
<td>71%</td>
<td>Urhikoro, creek, ‘The Brown One’</td>
</tr>
<tr>
<td>- Uncertain</td>
<td>14%</td>
<td>Shiparipabo, creek, ‘Where There Were Sting Rays’</td>
</tr>
<tr>
<td>Non-Amerindian</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>- Sranantongo</td>
<td>10%</td>
<td>Matta, village, ‘Mortar’</td>
</tr>
<tr>
<td>- Sranantongo/Dutch</td>
<td>3%</td>
<td>George Kriki/Kreek, creek, ‘George Creek’</td>
</tr>
<tr>
<td>- Dutch</td>
<td>2%</td>
<td>Marijkedorp, village, ‘Marijke’s Village’</td>
</tr>
</tbody>
</table>

Although all Amerindian place names (85% of all collected place names) reported here are of Lokono terms according to the Lokono consultants, their historical provenance may be more complex than anticipated by the speakers. Many place names refer to species of fauna and flora, which belong to a vocabulary shared by the Amerindian languages of the Guianas (see also Carlin n.d.; Goeje 1926; Renault-Lescure 2009; 2005; Rybka n.d.; Taylor 1953). Take as an example the term shibali ‘sting ray’, which is a likely etymology of the creek name Shiparipabo. The term shibali has cognates at least in Lokono (Arawakan), Kari’na and Trio (Cariban), and the Wayãpi language (Tupian). In this particular case, the remaining morphology of the place name is revealing: the ending –pabo may contain the Kari’na locative suffix –bo or even its past tense equivalent –pápo ‘place where someone or something used to be’ (Courtz 2008). Bearing in mind the existence of the shared ethnobiological vocabulary and the fact that the precise distribution and the migrations of the Lokono and the Kari’na in the past are shrouded in mystery, it may be difficult, if not futile, to establish the exact source language of certain place names.
The Non-Amerindian group (15%) includes place names of Sranantongo and, less frequently, Dutch origin, reflecting the fact that Sranantongo is more popular than Dutch as a means of daily communication. Some villages and creeks, for instance, have both a Lokono and a Sranantongo name—the Lokono village Korhopa (etymology unknown) is called Matta ‘mortar’ in Sranantongo. Such double names encode different meanings as in the example above or are calques and adaptations of each other, such as the already mentioned Urhikoro ‘The Brown One’ and Madisero ‘One Lacking Game’, which are known under their Sranantongo names as Blakka Watra ‘Black Water’ and Aboma Kriki ‘Anaconda Creek’, respectively. The latter name is interesting as it adds to the etiology of the Lokono place name—according to the speakers, there is no game in and around the creek because the creek is a home to these gigantic snakes.

The fact that some settlements have Dutch names shows that the official language of the country is slowly encroaching on this domain. This is clearly visible in the names of newly established settlements, where Dutch administrative and political discourses are involved. Klein Powakka ‘Little Powakka’, for example, is a Lokono village established in 2014. The name is a hybrid of both the Lokono (Pwaka) and the Dutch (klein ‘small’) lexicon, forming an adjectival phrase, in which the modifying element encodes size relative to another settlement—a pattern typical of Dutch but not of Lokono place names.

In sum, Lokono place names mirror the major sociolinguistic trends in the community. They reflect the geographic and linguistic ties with the Kari’na and the progressing language shift to Sranantongo and Dutch, on both the lexical and structural level. However, irrespective of their linguistic origin, all attested place names behave in the same way with respect to the proper/generic and the what/where distinctions (§ 6.6 below).

### 6.5 Semantic content of place names

The previous sections have provided a number of examples showcasing the types of meanings encoded in Lokono place names—this section provides a bird eye’s view of the semantic content of the domain. I provide no table here since many place names combine two or more meaning components described below, making it difficult to quantify the data.

Lokono place names often relate to the biotic and abiotic features of the environment. Many places are named after plant species found at the location, most commonly species of trees. Although most of the plant names found in place names refer to species that are important in some way or another to the community’s cultural practices, as part of place names they usually encode a perceptually salient landmark rather than a patch of a valuable natural resource. The simplex place names Hobo (Spondias mombin), a name of a creek, or Borada (Parinari spp.), a name of a spring, refer to singular exemplars of trees found at the location. Reference is also made to parts of trees, for instance, Pakorhi Daya ‘Pakorhi Trunk’ (Platonia insignis) or Lô Toro ‘Lô Stump’ (Oenocarpus bacaba). Less frequently the plant term refers to more than one exemplar, as in the case of the Korhobali creek, the banks of which are covered by korhobali trees (Pentaclethra macroloba).
Typically, patches of plant resources are, however, referred to with derived generic terms (see chapter 5). Within the domain of fauna, the Lokono place names encode mostly fish species in the names of the fisheries, such as Ayomarha Kabura ‘Ayomarha Fishery’ (Hoplias malabaricus). The Lokono sense of humor comes to the fore in occasional names such as Yowow Kabura ‘Mosquito Fishery’, which signals that you can only “catch” a few mosquito bites at the relevant fishery. A similarly joking attitude reverberates in creek names such as Fodi Harhan—a phonologically reduced version of an event nominalization Fodi Harhan ‘Monkey is Finished’—which according to the speakers is named so because all the monkeys in that area have been hunted down. Animals are referenced also in relation to an incident, such as Kabadarro Shi ‘Tiger’s Head’—a creek along which a Lokono man killed a huge tiger (kabadaro lit. ‘one with claws’). Not uncommon either is referring to activities of animals through place names, for instance, Warhiro Thanale ‘Drinking Place of the Bush Dogs’, in which the possessor encodes the animal (warhiro) and the possessed locative nominalization the activity (thanale, from the verb uthun ‘drink’). It is my impression, however, that such places are not directly related to hunting or fishing activities.

Place names can also encode the sensory experience afforded by the place. Tomorero, a creek name derived from the verb tomoren ‘bitter’, encodes the taste of the water, Omadaro from the verb omadun ‘roar’ refers to the sound made by the water in the creek, while Urhikoro and Harhirharo Koshi (lit. ‘White Eye/Color’), derived from urhin ‘dark’ and harhirhan ‘white’ respectively, indicate the hue of the water. Sensorimotor experience may also be encoded indirectly, as is the case with the hydronym Manarhibali, a creek surrounded by manarhibali bushes (Pythecellobium spp.), which form an impenetrable mesh similar in pattern to manarhi ‘a cassava sieve’. Such etiologies are directly accessible to the speakers, and regularly bring a smile on the face of a person explaining their meaning to the uninitiated.

Landscape features are explicitly named by certain types of place names, in which case the relevant landscape term is the head of the expression, for instance, Karhiwaro Kabura ‘Karhiwaro Fishery’. Landscape terms attested in place names include kabura ‘fishery’, kori ‘bathing place’, banabo ‘camp’, karhow ‘savanna’, konoko ‘forest’, kabuya ‘field’, and in partly analyzable place names oni ‘rain/river’ and ima ‘estuary’. The referents of such place names always match the landscape feature named. Only one landscape feature—the creek—is referenced not by a full noun (i.e. onikhan ‘creek’) but by a 3rd person feminine prefix thu—referring to a creek in, for instance, Thurhebo ‘Its Bank’ (from rhebo ‘bank’) or Thushirima ‘Its Headland’ (from shirima ‘headland’). These are the only case where the landscape term does not function as the head, but as the possessor.

Person names are occasionally part of place names, usually encoding the person in charge of a settlement, a bathing place, or a fishery. This does not seem to be a common Lokono pattern as most of these place names include Sranantongo or Dutch names of people—that is, strangers to the community, for instance, Draaibas Akubanale ‘Draaibas’ Resting Place’, named after a Kari’na man called Draaibas, who made it his habit to rest under a tree there. Lokono human agents are, however, referenced by the possessive prefixes found with inalienable nouns (1st and 3rd
person plural). This pattern is characteristic of place names that are locative nominalizations encoding the activity typical of the location. Such locative nominalizations, however, name also locations typified by animal activity mentioned above, in which case the agent is encoded by a full noun (e.g., Warhiro Thanale ‘Drinking Place of the Bush Dogs’). Finally, reference to events, though not common, is also attested in the corpus. Examples include place names such as Kambana Ôdon ‘The Death of the Blue Butterfly’, a place where a medicine-man, one of whose incarnations is a blue butterfly called kambana, died. The events are encoded by event nominalizations in –n, for instance, ôdon ‘die/death/dying’.

6.6 Lokono place names: a definition

The structurally, referentially, sociolinguistically, and semantically complex picture of place naming strategies described above is unified by a common denominator. All place names are definable on language internal grounds by their morphosyntactic behavior (Figure 24). They are, on the one hand, distinguished from proper nouns on the basis of their behavior with the indefinite article, numerals, the collective suffix, and verbs of naming. On the other hand, they are distinguished from what-nouns (i.e. nouns denoting people, animals, and objects) on the basis of the directionality markers they combine with.

<table>
<thead>
<tr>
<th>proper/generic distinction</th>
<th>proper term</th>
</tr>
</thead>
<tbody>
<tr>
<td>what-noun</td>
<td></td>
</tr>
<tr>
<td>• person terms</td>
<td>• names of people</td>
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<tr>
<td>• animal terms</td>
<td>• names of animals</td>
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<tr>
<td>• plant terms</td>
<td>• names of spirits</td>
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<td>• spirit terms</td>
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<tr>
<td>• object terms</td>
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<td>• relational terms</td>
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<table>
<thead>
<tr>
<th>proper/generic distinction</th>
<th>proper term</th>
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</thead>
<tbody>
<tr>
<td>where-noun</td>
<td></td>
</tr>
<tr>
<td>• landscape terms</td>
<td>• names of places</td>
</tr>
<tr>
<td>• configurational terms</td>
<td></td>
</tr>
<tr>
<td>• structure terms</td>
<td></td>
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</tbody>
</table>

None of the two parameters is sufficient to define place names. Proper names also include names of people, animals, and possibly spirits. Where-nouns—the category in which place names belong—also include configurational terms (e.g., diako ‘top’), terms for structures (e.g., bahu ‘house’), and generic landscape terms (e.g., kori ‘bathing place’), many of which form part of place names. However, when combined, the proper/generic and the what/where distinctions, discussed in detail below, exclusively define Lokono place names, and help distinguish potentially ambiguous expressions.
6.6.1 The proper/generic distinction

Place names are proper nouns referring to specific landscape features, as opposed to generic landscape terms denoting types of landscape features and other generic nouns denoting places. Importantly, even though the interviews were gauged to elicit proper names only, the consultants named a few generic terms as well, for instance, konoko ‘forest’, onikhan ‘creek’, and omadâro ‘rapids’. In the Lokono case such generic landscape terms can form part of proper place names, for instance, Kasuporhi Konoko ‘Cassipora Forest’. At first glance, some of the complex expressions can be analyzed as descriptive terms with a generic element. In fact, there are also place names which are formally identical to generic landscape terms, for instance, Omadâro ‘Roaring One’—a name of a creek derived from the verb omadun ‘to roar’, and identical to the generic landscape term omadâro ‘rapids’ (lit. ‘roaring one’). Such overlap between proper and generic terms in the domain of landscape may in fact be common in small communities, where there may be only one exemplar of a certain landscape feature within the relevant territory. It is therefore necessary to distinguish proper names from descriptive generic expressions on language internal grounds in the data. In Lokono, the following linguistic means can be used as tests for the status of an expression as proper or generic: collocation with verbs of naming, the collective suffix, the indefinite article, and numerals.

First, the verb iritin ‘name’ is used only with proper names, as in (244). The iritin-verb frame can be used as a first indicator of the proper status of a place name.

(244) To kia konokoda, neiritada no “Nakora Bitonon”.

to kia konoko=da n–eiri–ta=da=no
DEM:F DSC forest=DIRCT 3PLA–name–VBZ=DIRCT=3FB
na–kora bito–nõŋ
3PLA–hammock.POSS burn,REFL–REFL.NMLZ

‘This forest, they call it Nakora Bitonon (lit. ‘Burning of Their Hammocks’).’

In (244), the verb iritin ‘name’ is used with a proper place name Nakora Bitonon ‘Burning of Their Hammocks’. The place name itself is a possessive phrase with a nominalized reflexive verb bitonon encoding an event, the participant of which is expressed by the possessor nakora ‘their hammocks’, including the 3rd person plural prefix na–. The location refers to a hunting camp of the Lokono ancestors where their hammocks mysteriously combusted. The verb iritin ‘name’ cannot be used with generic terms. This distinguishes the verb iritin from its derivational base, the noun iri ‘name’, which means both a proper name and a generic term for something. The verb iritin ‘name’ stands also in opposition to the empty verb a/o, which can mean ‘name’ with both proper and generic terms, as in (245) and (246), respectively.

(245) “Kakhalekoyaro” na thumun, khaleko wabo tholokhodika.


‘“Kakhalekoyâro” (lit. ‘One With Quartz’) they call it, pure quartz is in it.’
In the complex place name Kakhalekoyaro ‘One With Quartz’ appears— a form derived with the suffix –ro from a complex possessive verb kakhalekoyan ‘have quartz’, ultimately built out of the possessed form of khaleko ‘quartz’ and the attributive prefix. The same construction with the empty verb a/o can also be used with generic terms, as in (246).


In (246), the generic term konokhodo ‘Maroon’ appears showing that this construction is not a good diagnostic of properhood, as opposed to the îritin-verb frame. Notice that in (244), (245), and (246), the verbs, whether îritin or a/o, appear with the 3rd person prefix na–. Most proper place names and the Lokono vocabulary as a whole are attributed to the way ancestors named things.

The second test involves collective marking. The collective suffix –be indicates that there is an unspecified (but higher than 1) number of referents denoted by the noun, for instance, pêrobe ‘a group/number of dogs’ (from Spanish perro ‘dog’). Generic terms, including landscape terms, combine with the collective suffix, as in (247).

(247) Yo máya kadiseka kiba, onikhanbe, himebe, khotabe. yo mːaːya ka–dʰise–ka=kiba ʰpi=kʰam–be ime–be kʰota–be ANPH,WHR side ATR–game–PPFV=too rain–DIM–COL fish–COL animal–COL ‘On that side, there is game too, a number of creeks, fish, animals.’

In (247), three generic terms appear with the collective suffix, but since proper place names refer to unique entities they cannot be combined with it. Speakers consider such expressions as *Kasuporhibe ‘Cassipora–COL’ ungrammatical. It is imaginable, though not attested, that the collective suffix –be could be part of a proper name, for instance, *Dalibe, ‘a number of dali trees’.

Related to the incompatibility with the collective suffix is the ungrammaticality of combining place names with the indefinite article. Proper place names cannot be combined with the indefinite aba, derived from the numeral aba ‘one’, nor with its masculine abali or feminine abaro variants. Neither can they be combined with numerals. This opposes them to generic terms, as shown in example (248).

(248) Aba omadâro kiba, mada kia kho sa wabo buduha. aba omadː–ro kiba ma=da kia=kʰo sa=wabo bi–dikʰa INDF roar–F too BUF=DIRCT DSC=NEG good=SPR 2SG,–see ‘A rapid too, but this one you cannot see very well.’
In (248), which is a description of a picture showing a place unknown to the speaker, the landscape term *omadâro* ‘rapids’ is used. It is preceded by the indefinite pronoun, signaling that it is used here as a generic landscape term. Interestingly, there is also a creek in the Cassipora territory called *Omadâro* ‘Roaring One’. Being a place name referring to a specific landscape feature, it cannot be combined with the indefinite article.

Although the indefinite article and numerals can serve as an indication of the generic character of a term, it is worth noting that all Lokono proper names (of places and persons) can appear with demonstratives, which when unspecified for their deictic properties, function as definite articles.

(249) [...] *ma dakishidwatika âkan to Kasuporhi khanan.*

In (249), the name of the village is preceded by the feminine demonstrative *to*. The demonstrative is not obligatory with proper names and the difference between the bare form and the form with the demonstrative is not clear.

The combinatorial possibilities of noun phrases with naming verbs, the collective marker, numerals, and the indefinite article allow us to distinguish, on close inspection, proper names from generic terms. It should be stressed, however, that Lokono grammar allows a certain degree of ambiguity. Number is not obligatorily marked on Lokono nouns. The demonstratives and the indefinite article are also not obligatory. In natural discourse therefore some noun phrases remain ambiguous. Take as an example *Thurhebo* ‘Its Bank’, the name of a mooring place that recurs in all three villages. *Thurhebo*, as a proper name, refers to a specific instance of the landscape feature *rhebo* ‘bank’—the place where the dugouts of the villagers used to be moored. As a generic landscape term *thurhebo* could refer to any part of the riverbank. In the two examples below, there are no linguistic means that can help us understand whether a proper name or a generic term is used.

(250) *Thurhebon balabalâko wa shokhanin.*

‘We set for a while at the bank of (the creek).’

(251) *Kasuporhi wâya wôsa koba Thurhebonro.*

‘From Cassipora, they used to go toward Thurhebo.’

Example (250) taken out of context could be interpreted in both ways. Incidentally, in this case the generic reading was intended. Analogically in (251), there are no linguistic clues helping us determine the referent of *Thurhebo*, which in this case was intended as a lexicalized proper name. The linguistic and extralinguistic
contexts are often crucial to the interpretation of an expression as a descriptive phrase or a proper name. The above tests allow us, however, to single out proper nouns from the Lokono lexicon. This category includes also proper nouns that are clearly not place names, for instance, proper names of people. The what/where distinction, discussed in the next section, excludes such proper names from the corpus of place names.

6.6.2 The what/where distinction

To uniquely define the category of place names, we need to resort to another criterion—namely, the what/where distinction. The what/where distinction is a type of noun categorization system. It bears resemblance to better-known categorization systems in the nominal domain, for instance, the mass/count distinction. It has a specific grammatical locus (i.e. the spatial expression) and it divides nouns in two broad categories (the what- and where-nouns). Certain types of nouns can shift from one category to the other, resulting in systematic modulations of their meaning. Finally, it is grounded in the ontological properties of the real-world referents. Below, I demonstrate how the distinction operates in Lokono, with particular reference to place names (for an analysis extending to other domains of Lokono vocabulary see chapter 7 and for a comparative angle chapter 8).

The locus of the what/where distinction is the spatial expression—that is, the grammatical construction used in the language to describe spatial relations between the Figure, the entity to be located, and the Ground, the entity with respect to which the Figure is located (Talmy 1975). Following Lestrade (2010), I argue that spatial meaning consists of two elements: configuration and directionality. Configuration describes the spatial relation that holds between the Figure and the Ground. Take topological relations as an example. In English these are encoded by configurational prepositions, for instance, in, on, above, under. Directionality distinctions, on the other hand, correspond to the changes of configuration over time:

(252) a. Location—the absence of change in configuration.
   b. Goal—the change into some configuration.
   c. Source—the change out of some configuration.

The difference between configuration and directionality can be exemplified on English data, as in the corresponding examples in (253).

(253) a. The cat is on the shelf.
   b. The cat sprang onto the shelf.
   c. The cat jumped from the shelf.

The location directionality is unmarked in English—a configurational preposition on appears on its own, as in (253). The goal directionality is usually marked with the preposition to, either in combination with a configurational preposition or alone, as in (253). Finally, the source directionality is expressed by the preposition from, which does not normally combine with configurational prepositions, as in (253). The what/where distinction contrasts nouns that receive different types of directionality.
marker within a single directionality. Some nouns receive the directionality marking that the interrogative what combines with and others the directionality marking that the interrogative where receives, hence the names of the two categories. This differs per directionality—in (254) the English goal directionality is exemplified. Notice that humans are subsumed under the what-category.

(254) a. He went where?
b. He went to what/whom?

In English, the question word where is left unmarked in the goal directionality, but the question word what needs an overt marker, the preposition to. What-nouns are hence nouns that combine with the preposition to in English, and where-nouns are those that are left unmarked, when used in the goal directionality. In English virtually all nouns are what-nouns (e.g., table, chair, John, river, Amsterdam). There are hardly any nouns in English that can pattern like the where interrogative: important exceptions include nouns such as home. However, in some languages the situation is different. The Lokono location and goal directionality markers divide the lexicon into sizeable groups of what- and where-nouns. Importantly, the same source marking can be used with all types of nouns. In other words, the source directionality does not single out any nominal category, and it will not be discussed further.

The location and goal directionality are conflated in Lokono—that is, the same form expresses both functions, which are then disambiguated by the predicate. A static predicate implies the location directionality, as in (255) and (256). Importantly for the analysis of place names, there are two different directionality markers, the free form bithi and the suffix –n, glossed as LOC.WHT and LOC.WHR, respectively. Each of them selects different types of nouns.

(255) Mural bithika we.
    Muriel bitfi–ka=we
    Muriel LOC.WHT–PFV=1PLB
    ‘We are at Muriel’s.’

(256) Thusakho we.
    ti–sa–kɔ–ŋ–ka=we
    3FA–name–NEG–LOC.WHR–PFV=1PLB
    ‘We are in Thusakho (lit. ‘It Has No Name’).’

In (255) and (256), a static predicate is used—a stative verb construction with the perfective–ka—implying the static location directionality. Notice that the subjects of stative verbs are expressed by personal enclitics—the same forms that encode the object of transitive verbs and are glossed with the subscript B. Two different

82 Nouns such as home are clearly deprived of many nominal features in English, and some would classify them as adverbs. If this is the case, then the where-category is non-existent in English.
directionality markers are used. In (255), the bithi-marker appears with the person name Muriel, while in (256), the n-marker appears with the place name Thusakho—an avoidance term used to refer to the Mapana creek in order not to anger the water spirit.

When a change-of-location predicate is used, the goal directionality is implied, as in (257) and (258).

(257) *Wabarhosen bithi wôsa.*

\[ wa\text{-}b\text{aros}\text{êm} \ b\text{itj}\text{i} \ w\text{o}\text{-}s\text{a} \]
\[ 1\text{PL}\text{-}chief \ LOC\text{.WHIT} \ 1\text{PL}\text{-}go \]

‘We went to our chief.’

(258) *Konokonro wôsa yokhan.*

\[ konok\text{o}\text{-}n\text{-}ro \ w\text{o}\text{-}s\text{a} \ yok\text{êa}\text{-}ŋ \]
\[ forest\text{-}LOC\text{.WHR}\text{-}ATL \ 1\text{PL}\text{-}go \ shoo\text{.LNTRY}\text{-}NMLZ \]

‘We went to the forest to hunt.’

In (257) and (258) the same directionality markers that were used in (255) and (256), appear, but the presence of a change-of-location predicate implies the goal directionality. Again, the two different markers combine with different types of nouns. In (257), the goal of movement is expressed by the person-denoting noun wabarhosen ‘our chief’, while in (258) the goal of movement is encoded by the generic landscape term konoko ‘forest’. It should be mentioned that both markers have an atelic form, –nro and bithiro, respectively, derived with the atelic suffix –ro. The atelic forms are used when the configuration, at location or goal, has not been fully accomplished—that is, when the Figure is merely oriented toward the location or merely moving toward the goal.

It should be reiterated that there are two distinct formal exponents of the location and goal directionality in Lokono, namely bithi and –n, which select different types of nouns. In examples (255) and (257), the directional marker bithi is used, following the person-denoting nouns wabarhosen ‘our chief’ and Muriel, a proper name of a person. The bithi-marker appears only with nouns denoting animate beings, plants, and objects. It also combines with the interrogative noun hama ‘what’ and the interrogative halikan ‘who’. It is called the what-marker and the category it defines is labeled ‘what-nouns’. In examples (256) and (258), the directionality marker –n appears in combination with the avoidance place name Thusakho and the generic landscape term konoko ‘forest’, respectively. The n-marker combines with a select group of nouns—namely, configurational nouns (e.g., loko ‘inside’), nouns denoting structures (e.g., bahu ‘house’), generic landscape terms (e.g., onikhan ‘creek’), and proper names of places. The n-marker appears also with the interrogative term halo ‘where’, and is therefore called the where-marker and the category it defines the where-nouns.

Place names fall within the category of where-nouns, which is grammatically different from the category of what-nouns with respect to the location and goal directionality marking. The linguistic provenance of place names is of no
importance to this classification. Utterances (259) and (260) include examples of a Dutch and Sranantongo place name, respectively.

(259) *Suiker Damnin thunekhebo koba.*

\[\text{suiker dam–ni–nj} \quad \text{t’i–nek}^b\text{bo=koba}\]

sugar dam–EP–LOC.WHR 3\text{F}_\text{A}–\text{work}=\text{REM}.PST

‘They worked at Suiker Dam (lit. ‘Sugar Dam’).’

(260) *Kia Redi Dotinro thurhurhukha.*

\[\text{kia} \quad \text{redi} \quad \text{dofī–n–ro} \quad \text{t’i–tīrika}^b\text{a}\]

DSC red sand–LOC.WHR–ATL 3\text{F}_\text{A}–\text{move}

‘(The school), it moved to Redi Dotti.’

In (259), the epenthetic syllable -ni- is inserted for purely phonological reasons—that is, because the where-noun ends in a consonant. Both *Suiker Dam*, the name of an old sugar plantation, and *Redi Dotti*, the name of a mixed Lokono–Kari’na village, appear with the where-marker characteristic of where-nouns. Lokono, Sranantongo, Kari’na, and Dutch place names all pattern as where-nouns when placed in the Lokono morphosyntax.

The type of referent is also of no importance. Proper names of waterways and water bodies, vegetation assemblages, human-made landscape features, whether large or small, all receive the where-marker. Below two more examples are given.

(261) *Dakuthu kudada de Gangami Korin.*

\[\text{da–kiti} \quad \text{kida}=\text{da}=\text{de} \quad \text{ganga–mi} \quad \text{kuri–nj}\]

1SG–grandma wash=\text{DIRECT}=1SGb grandma–DEAD baths–LOC.WHR

‘My grandma washed me at Gangami Kori (lit. ‘Bathing Place of the Late Grandma’).’

(262) *Lumoromoroda Sorhinamanro.*

\[\text{li–moro–moro–da} \quad \text{surjinamā–n–ro}\]

3\text{IA}–ITR–fly–VBZ Suriname–LOC.WHR–ATL

‘He keeps flying to Suriname.’

In (261), the place name *Gangami Kori* ‘Bathing Place of the Late Grandma’—denoting an area of only a few square meters—appears with the telic where-marker expressing the location directionality. In (262), the place name *Sorhinama*—denoting the whole country of Suriname—appears as the atelic goal of motion of the reduplicated verb *moromorodon* ‘fly repeatedly’.

Finally, as evident from the examples presented, the internal structure of the place name has no bearing on the what/where categorization either—all attested morphosyntactic types appear with the where-marker. Interestingly, with place names derived with the feminine suffix –ro, the where-marker in its atelic form is often shortened. Take as an example the place name *Madisero* ‘One Lacking Game’ (from *madisen* ‘lack game’). The telic form is regular: *Madiseron* ‘at/to Madisero’,
but in the atelic form, instead of *Madiseronro*, the forms *Madisenro* and *Madiseninro* are preferred.

It is worth reiterating that neither the proper/generic nor the what/where distinction is by itself sufficient to define place names as a class on language-internal grounds. Place names and personal names both belong to the category of proper nouns. *Where*-nouns, on the other hand, include also (but not only) generic landscape terms. These terms are often part of place names and can be ambiguous between a generic and a proper reading. When combined, however, the proper/generic and the what/where distinction can delimit the domain of place names and serve as disambiguating devices vis-à-vis personal names and generic terms, as discussed in the next section.

6.7 Discussion

The exponents of two grammatical phenomena, the proper/generic and the what/where distinction single out the domain of place names from the Lokono lexicon. Place names are proper nouns—that is, nouns that “denote a unique entity at the level of established linguistic convention to make it psychosocially salient within a given basic level category” (Langendonck 2007:87). In Lokono, proper nouns are distinguished from generic nouns by means of their combinatory possibilities with verbs of naming, the collective suffix, numerals, and the indefinite article. The basic level categories referred to by Langendonck are the types of features named, for instance, *people, animals, ships, mountains, or rivers*. Lokono data show that the basic level categories are organized linguistically into two main groups, namely, what-nouns and where-nouns. The former include person-, animal-, plant-, object-, and part-denoting nouns. The latter include nouns denoting spatial regions (e.g., *diako* ‘top’), structures (e.g., *bahu* ‘house’), landscape features (e.g., *onikhan* ‘creek’), and their parts (e.g., *diako* ‘tributary’) For Lokono, the definition of proper nouns given above can therefore be rewritten in terms of the two categories. Proper nouns denote a unique entity at the level of established linguistic convention to make it psychosocially salient within the category of what-nouns or where-nouns. Consequently, Lokono place names are proper nouns that denote a unique entity at the level of established linguistic convention to make it psychosocially salient within the category of where-nouns.83

The linguistic distribution into what- and where-nouns is not accidental, but grounded in the ontological properties of the referents. Lokono what-nouns denote movable entities delimited by crisp boundaries. Such entities are usually perceptually bounded—that is, they are relatively small so that their contours can be perceived within a single act of perception. Where-nouns, on the other hand, denote entities that are immovable and sometimes lack crisp boundaries—it is unclear, for

83 I am unaware of Lokono proper names of temporal periods such as the English *Golden Age*. If such existed they may also pattern as where-nouns. Generic temporal expressions, such as times of the day can be expressed in Lokono as locative stative clauses with the where-marker (see example (187)).
instance, where the boundaries of a mountain, a bathing place, a fishery, a camp, or a spatial region such as diako ‘top’ are. Many of such entities are also perceptually unbounded. That the what/where distinction is not just a matter of linguistic accident or a residue of a diachronic process is shown by the fact that certain nouns can take both markers resulting in systematic modulations of their meaning. Part-denoting nouns (what-nouns), for instance, become configurational nouns (where-nouns) when combined with where-marker. The body part noun duna ‘arm’ when followed by the where-marker denotes a spatial region projected from the part, not the part itself. In terms of ontological properties, it represents a change from a more perceptually bounded entity with crisp boundaries to a perceptually less bounded entity with more fuzzy boundaries. More examples of such modulations are described in chapter 7, demonstrating that the distinction is synchronically functional. Such shifts from one category to the other are an inherent part of noun categorization, for instance, the mass/count distinction.

Importantly, the what/where distinction can be crucial to the recognition of a term as a place name. This becomes particularly important when a place name is homonymous with a what-noun. Take as an example the monomorphemic creek names coined after tree species. Nouns-denoting trees are what-nouns, as in (263).

\(\text{(263) } \text{Kofa bithiro thurhibiwa.}\)

\[
\begin{array}{c}
kofa \\
tree
\end{array}
\quad \begin{array}{c}
\text{bi}ṭi-ro \\
\text{LOC,WHT-ATL}
\end{array}
\quad \begin{array}{c}
ti-ṭibiswa \\
3\text{FA-roll,REFL}
\end{array}
\]

‘It rolled toward the tree (Clusia sp.).’

When kofa (Clusia sp.) is used as a what-noun, denoting a tree, it is followed by the what-marker. However, there is also a creek in the Cassipora territory called Kofa, named so after the same tree species. As a place name, Kofa can only be followed by the where-marker in the spatial expression, as in (264).

\(\text{(264) } \text{Wôsa Kofanro, ma ama kho wôthika.}\)

\[
\begin{array}{c}
w-o:sa \\
1\text{PLA-go}
\end{array}
\quad \begin{array}{c}
kofa-n-ro \\
\text{tree-LOC,WHR-ATL}
\end{array}
\quad \begin{array}{c}
ma \\
\text{but}
\end{array}
\quad \begin{array}{c}
ama=k\o \\
\text{what=NEG}
\end{array}
\quad \begin{array}{c}
w-o:tfika \\
1\text{PLA-find}
\end{array}
\]

‘We went to Kofa, but we didn’t find anything.’

The differential directionality marking makes it possible to distinguish between the two different meanings of kofa. This is particularly important in a situation in which other clues are absent, especially when the exponents of the proper/generic distinction, which could inform the decision, are not present, as in examples (263) and (264) above.

The same logic applies also to some of the deverbal place names encoding physical features. Take as an example Urhikoro ‘The Brown One’, the name of a

\^{84} \text{English mass nouns placed in a syntactic frame of a count noun systematically imply a type or a quantity of the substance (e.g., two cheeses, three coffees). And vice versa, count nouns can be forced into a syntactic frame of a mass noun. Pelletier (1975) discussed a special example of it, which he called the Universal Grinder (e.g., There is cat on the street).}
creek referring to the color of its water, derived from the verb urhin ‘brown’. Such nominalizations in –koro are also used as descriptive terms referring to people, animals, and objects. In fact such derivations, especially those referring to color, can be used as people’s nicknames, in which case the color refers to the color of the skin or hair.

(265) Môsun ba to Urhikoro bîtì.

m–o:sì–m b–a to iři–koro bîtì
‘Don’t go to Urhikoro (person/thing).’

(266) Dôsa kanba to Urhikoron.

d–o:sà kâ–m–ba to iři–korô–ŋ
‘I am going to bathe at Urhikoro (creek).’

The differential what/where marking disambiguates such cases. In (265), in which the privative suffix triggers the empty verb construction, the use of the bîtì marker implies that a person or an object is the referent of Urhikoro. In (266), on the other hand, it is the where-marker that implies that Urhikoro refers to a place. The what/where distinction therefore not only helps define place names, but also occasionally aids in disambiguating the referential scope of homophonous forms.

Place names are a language-internally definable linguistic domain in Lokono, a fact of relevance to the domain of onomastics in particular, and linguistics in general. Although this type of nominal categorization is not yet described for many languages in detail, it is important to point out that the what/where distinction has been documented in two other unrelated languages—namely, Marquesan, a Polynesian language spoken in the Marquesan Islands (Cablitz 2008), and Makalero, a Papuan language of East Timor (Huber 2014). A number of other languages show similar patterns in the spatial expression, although detailed studies of the distinction are missing. Although just as in the case of the mass/count distinction the precise membership of the what-category and the where-category differs from language to language, place names in all three languages are at the core of the where-category (see chapter 8). In all three cases, the distinction is made in the location and goal directionality, not in the source directionality, which may be linked to the fact that sources are cognitively less prominent, and thus encode less distinctions (Kopecka and Narasimhan 2012; Regier and Zheng 2007).

Although this study discusses only linguistic categorization of nouns, it should be stressed that linguistic categorization may have repercussions for other types of cognitive processes. In the domain of spatial language, this has been proven for the linguistic frames-of-reference—the major frame-of-reference parallels the way non-verbal spatial tasks are solved (Levinson 2003; Levinson 1996). Future research should determine whether the way we linguistically categorize place names in Lokono and other languages has consequences for the processing of places by other cognitive systems. A language-internal definition of place names is a signal that place names may be a domain of certain cognitive import, opening the domain to
other cognitive sciences. Recently, the theoretical distinction between proper and generic terms has been taken up by cognitive scientists using state-of-the-art technologies (Müller 2010; Müller and Kutas 1997; Proverbio et al. 2001; Schweinberger and Kaufmann 2002; Delazer et al. 2003). Virtually all such studies, however, revolve around proper names of people, and are often limited to Indo-European languages. Few experiments look specifically at the psycho- and neurolinguistic reality of place names (Hollis and Valentine 2001). It is known, however, that places, the referents of place names, together with persons, the referents of person names, are hard-wired in the human brain since millennia (Hartley et al. 2013). Levinson succinctly summarizes the importance of places with the following words:

*Persons on the one hand and places on the other are our two great mental index systems — they are the two coordinate systems we use to plot our social and ecological spaces. Naturally, the two systems intersect: we think of places in terms of persons, and persons in terms of places. Both systems are underpinned by specialized neural circuitry. Both derive their cognitive power from the fact that they name nodes in great networks — a person is joined by kinship or association links to a field of other persons, and a place is connected by pathways to a network of other places.*

(Levinson 2011:ix–x)

The linguistic encoding of places can give us an insight into this mental index system, and bring to the fore the ways in which we, as individuals, linguistic communities, and humans in general organize the geographic space around us into knowledge systems. The Lokono data demonstrate that places, whether named by generic or proper names, are linguistically distinguished from other types of entities in spatial language. How important such systems are is evidenced by the almost universal presence of place names in language (but see Vos 2012; Widlok 2008 for important exceptions).

### 6.8 Conclusions

Lokono place names exhibit a variety of forms and meanings. Many of their features can be explained by the general architecture of the language and extra-linguistic factors. The place name corpus reflects the sociolinguistic context—the generic affiliation of place names mirrors the progressing language shift and the interactions with the other Amerindian groups in the past. The referents of place names document the Lokono changing pattern of interaction with landscape—the importance of water features is changing, resulting in the semantic extension of landscape terms such as *kori* ‘bathing place, resort’ and new place names for roads. Semantically, the Lokono place names speak volumes for the Lokono perception of what the landscape affords. Most place names are coined after physical features of the environment, including sensorimotor experience and indicator species, but also activities played out in it (or a *taskscape* in Ingold’s (1993) terms). Structurally, the
names reflect the general tendencies of Lokono grammar—a predisposition for suffixation and the obligatory expression of possessor with inalienable nouns.

Irrespective of this variety, Lokono place names share two common denominators. First, they can appear in the iritin-verb frame and cannot combine with collective marker, the indefinite article, and numerals—the defining features of Lokono proper nouns. Second, they take the n-marker when used as locations or goals in spatial descriptions—the exponents of the where-category. These two parameters, when combined, single out Lokono place names from all other types of nouns: other proper nouns and other where-nouns. Both distinctions are productive processes, motivated ontologically and attested in other languages. The Lokono case shows that place names can be a language internally definable class and calls for the inspection of other languages from this angle, and for the attention of other cognitive scientists to the what/where phenomenon.
7. Lokono *what/where* distinction

Categorization is an inherent feature of human cognitive systems and processes. Though its form and function may assume different guises, it is presumed that categorization allows us to better organize our knowledge of the world, and access it in a more efficient way (Cohen and Lefebvre 2005). In Koestler’s words, it is a mechanism that helps us “[…] eliminate a large proportion of the input as irrelevant ‘noise’, and assemble the relevant information into coherent patterns […]” (Senft 2010:676). In language, these “coherent patterns” assume the form of linguistic categories. To constitute a valid object of linguistic comparison, such categories must be definable language-externally by means of an exclusive linguistic feature, for instance, a morpheme or a syntactic structure.

Spatial categories in particular are said to reverberate through language structure. In its most extreme form, this localist view has led some linguists to believe that “space is at the heart of all conceptualization” (Pütz and Dirven 1996:xi). Although this extreme view has been contested, it remains a fact that many domains are structured in terms of the same patterns as spatial ones (Casasanto and Boroditsky 2008; Lakoff and Johnson 2003; Lakoff 1987). Detailed descriptions of unrelated languages have further demonstrated how differently languages structure space linguistically (e.g., Ameka and Levinson 2007; Levinson and Haveland 1994; Levinson and Wilkins 2006). Nonetheless, underlying the cross-linguistic variety and the cross-domain mappings is the single fundamental spatial question: *Where is what?* Levinson and Wilkins (2006) call it the *Basic Locative Question*. The most natural, language-specific answer to it constitutes the *Basic Locative Construction*. The question–answer frame operates on two indispensable entities: the entity to be located (i.e. the Figure), and the entity with respect to which location is established (i.e. the Ground).

Of course, the same entity can sometimes function as the Figure and sometimes as the Ground. Nonetheless, it has been observed that certain restrictions apply. A large, immovable entity such as a house functions as the Ground rather than the Figure when combined with a small, moveable entity such as a bike (Gruber 1976; Talmy 1983). Therefore sentences such as *The house is behind the bicycle* are...

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86 An anonymous reviewer rightly points out that such localism is older than the work of Pütz and Dirven (1996). It goes back at least to the Byzantine grammarian Maximus Planudes, and recurs throughout the history of linguistics, most notably in the work of Hjelmslev (1972), and more recently in that of Anderson (1973; 1971).
somewhat dubious. This implies that some entities function more readily as Figures, while others lend themselves better to functioning as Grounds, at least in a relative sense. In fact Talmy’s (2000:312) terminology explicitly refers to “moveable” and “stationary” as characteristics of the prototypical Figure and the prototypical Ground, respectively. On the mesoscale of human experience of the world, such predispositions of entities to function as Figures or Grounds should be relatively consistent. Bearing in mind that categorization filters out “coherent patterns”, it is possible that the capability of functioning as the Figure or the Ground should be impressed on language structure. In other words, nouns that encode prototypical Figures and nouns that encode prototypical Grounds could be differentiated grammatically.

In this chapter, I demonstrate that this may indeed be the case. I argue that in the Lokono nominal domain the what/where distinction operates. The distinction manifests itself in the form of different spatial marking. Nouns denoting people, objects, and parts of objects—that is, typical Figure-denoting nouns—receive different spatial marking than nouns denoting places—that is, typical Ground-denoting nouns. I call the former category what-nouns, and the latter the where-nouns. Below, I first summarize the theoretical literature that has broached the topic of the what and where as linguistic categories (§ 7.1). Since the what/where distinction manifests itself in the spatial expression, I then present a theory of spatial meaning adopted as a framework in this chapter (§ 7.2). Subsequently, I discuss basic features of Lokono grammar, focusing on other types of nominal categorization and the form of the spatial expression (§ 7.3). I then demonstrate how what- and where-nouns function in Lokono spatial descriptions (§ 7.3.1), and discuss the morphosyntactic details of the two categories (§§ 7.3.2 and 7.3.3, respectively). Finally, I scrutinize the data in the light of other types of nominal categorization, showing parallels with the mass/count dichotomy (§ 7.4).

7.1 Linguistic theory of what- and where-nouns

The idea that nouns can be categorized on the basis of their spatial marking appeared already in the posthumously published writings of Whorf. Mackenzie points out that Whorf considered English nouns denoting cities and countries a cryptotype—that is, a category that may “easily escape notice and may be hard to define, and yet may have profound influence on linguistic behavior” (Mackenzie 2005:144). Whorf observed that such nouns are language-internally definable as a class. They can be substituted by here/there but not by it in spatial contexts (i.e. when used as goals or locations). Mackenzie (2005) developed Whorf’s observation, and noticed that this category was not limited to nouns denoting cities and countries. It encompassed all of what he called place-denoting nouns, whether relational (e.g., right, lee, inside) or non-relational (e.g., Amsterdam). Such nouns are opposed to nouns denoting
physical entities, which in spatial expressions are substituted by it (or him/her if referring to people). Compare examples a, b, c, and d of (267).  

(267)  
(a) I’ve come from Amsterdam, and Mike has come from there/*from it too.
(b) I’m standing to the right of Mary, and John is standing there/*to it too.
(c) I’m sitting in the lee of the wind, and Mary is sitting there/*in it too.
(d) I’m wrapped up in the blanket, and John is wrapped up in it/?there too.

Mackenzie (2005:144)

Elaborating on Whorf’s idea, Mackenzie defined a category of place-denoting nouns in English. His aim was to advance a theoretical point of Functional Grammar—namely, that places are not a type of entity. In other words, he argued that places (e.g., the referents of nouns such as Amsterdam or inside) and objects (e.g., the referents of nouns such as table or chair) are ontologically different, which renders the linguistic expression of places different from that of objects. Without entering into the discussion about whether places are a type of entity or not, it is important for the analysis presented here that Mackenzie noticed the syntactic pattern differentiating place-denoting nouns from object-denoting nouns (nota bene, I use the term entity to cover people, objects, and places).

Prior to Mackenzie (2005), Lyons (1977) had arrived at similar conclusions, though from a different vantage point. Lyons (1977) attempted to define parts-of-speech by finding their prototypical exemplars. Relying on assumptions of naïve realism, he argued that the physical world, as humans experience it, is populated for the most part with more or less discrete and moveable entities. He called these entities first-order entities and nouns denoting them first-order nouns—Lyons’ nouns par excellence. It was clear to Lyons that not all nouns behave like first-order nouns. Interestingly, he mentions landscape terms as one exception. However, due to his focus on first-order nouns, Lyons said but little about the periphery of the nominal domain. Importantly, by defining first-order nouns through the ontological features of their referents (“discrete” and “moveable”), he too established a link between the linguistic categories and the ontological properties of the real-world correlates of their members. The work of Lyons and Mackenzie resulted therefore in the identification of two nominal extremes: first-order nouns and place-denoting nouns.

Landau and Jackendoff (1993), who appear to have coined the terms what- and where-category, later claimed that all languages are sensitive to the what- and where-categories—that is, the distinction between terms for first-order entities and

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87 From a pilot study I conducted it appears that this distinction in English is not straightforward to the speakers and depends on the variety of English. To my knowledge there is no detailed study of how the distinction operates in English, and bearing in mind that in English configuration and directionality are not always clearly separable, the discussion of the two categories is complex. In this chapter I draw parallels with English, but these should be seen as a way to make the topic more familiar to the reader rather than as claims of linguistic parallelism.
terms for places—though their work was based on English data only. Their contribution to the development of this idea was an attempt at linking language structure to other cognitive systems. They tried to relate English prepositions to the *where*-system and nouns to the *what*-system of visual perception in the brain. Unfortunately, their study resulted in the association of spatial meaning solely with prepositions. The fact that nouns (e.g., *Amsterdam*) may belong to the *where*-category was overlooked.

The use of different terminologies, the Eurocentric bias, and the different research agendas have until now restrained research in this area. Studies by Cablitz (2008, 2006), who reported a case of the Marquesan *what/where* distinction, are a notable exception. In Marquesan the distinction is more pronounced than in English; nouns can be grouped into two categories based on the type of locative preposition they combine with. Critical of Lyons (1977), Cablitz (2008) points out that there is little evidence of which semantic parameters underlie the *what/where* split. It is worth reiterating that Talmy’s (2000) definitions of the Figure and Ground also refer uncritically to notions “moveable” and “stationary”. In her work Cablitz (2008) looks beyond the mere labels to see what semantics is associated with them. Cablitz (2008) investigates the Marquesan distinction and shows that in the few cases, in which a noun can combine with the markers of both categories, the two markers module the meaning of the noun in a systematic way. Take as an example the Marquesan noun *ka'avai*, which denotes a river when preceded by the *what*-marker (the locative preposition *'io* in Marquesan), but a valley when preceded by the *where*-marker (the locative preposition *'i*). By analyzing the semantic changes of the switches from one category to the other, Cablitz (2008) concludes that the meaning of a perceptually more bounded entity is associated with the *what*-category. And *vice versa*, the meaning of a perceptually less bounded entity is associated with the *where*-category. Cablitz (2008) makes therefore the first step in re-evaluating the semantic parameters that many took for granted. Importantly, phenomena similar to the distinction described for Marquesan, or for Lokono here, have been mentioned in passing in studies of many unrelated languages, such as Makalero from the Papuan family (Huber 2014), Onondaga, an Iroquoian language (Woodbury 1975), Bardi, a Nyulnyulan language (Bowern 2012), Longgu, an Oceanic language (Hill 1996), or Zulu and Tharaka, two Bantu languages (Buell 2007). The cross-linguistic diversity of the exponents of the *what/where* distinction has until now obscured the bigger picture—namely, the fact that the *what*- and *where*-categories are a cross-linguistically attested form of nominal categorization. Below I give a detailed description of how the *what/where* distinction operates in Lokono in an attempt at bridging this gap.

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88 I use *what* and *where* as labels for the two categories, since they are already generally accepted (Cablitz 2008; Landau and Jackendoff 1993). Other scholars have used different variations on the words *object/entity/thing* and *place/non-entity* but they turned out to be impractical because of the ambiguity of such terms in linguistics and in geography.
7.2 Spatial meaning in linguistic theory

The locus of the what/where distinction is the cognitively universal directionality component of the spatial expression. Previous studies of the what/where distinction have not looked specifically at the division of work in the spatial expression and have not named the directionality component specifically as the grammatical context, in which the distinction manifests itself. The discussion of the two categories requires therefore a theoretical framework of spatial meaning.

The Basic Locative Construction consists of the already mentioned Figure and Ground, but also of the spatial relation that holds between them. Following the work of Lestrade (2010), I decompose the spatial relation into a configuration and a directionality component.\textsuperscript{89} Configuration describes the type of spatial relation that holds between the Figure and the Ground. The number and the type of configurational distinctions (e.g., topological, relative, intrinsic, absolute) vary from one language to another (cf. Bowerman and Choi 2003; Levinson et al. 2003; Bowerman and Gentner 2009). Moreover, languages use different linguistic means to encode configurational concepts, such as configurational adpositions (e.g., English), configurational verbs (e.g., Makalero), or configurational nouns (e.g., Baure) to name some of the more common strategies.

The cross-linguistic variety of configurational concepts and their linguistic encoding contrasts with the universality of the directionality component of a spatial expression. Lestrade (2010) defines directionality as the change of configuration over time. Directionality has therefore only three primary distinctions:

(1) location directionality—that is, the absence of change in configuration.
(2) goal directionality—that is, the change into a configuration.
(3) source directionality—that is, the change out of a configuration.

According to Lestrade (2010:74), these primary distinctions “can be seen as cognitive universals”. Directionality has also secondary distinctions—namely, the atelic equivalent of goal—that is, toward—and the atelic equivalent of source—that is, away from—encoding the situations in which the change of configuration is not complete. Finally, there is the via directionality, applicable when the Figure changes location over time within the same spatial configuration or when the Figure enters and exits a configuration with a single event, as in the English sentences We have been walking in the forest for hours or We walked through the forest in an hour, respectively. For reasons of economy, languages may collapse some or all of the directionality distinctions into one form, and leave disambiguation to the linguistic context (cf. Nikitina 2009; 2008; Sinha and Kuteva 2008). Importantly, it is the

\textsuperscript{89} The terms directionality and configuration are used in keeping with the theory proposed by Lestrade (2010), which builds upon earlier work by Kracht (2008; 2003; 2002). They correspond to the earlier notions of Path and Place (Jackendoff 1990) or Vector and Conformation (Talmy 2000). However, I use the term location directionality instead of place directionality, since the term place has multiple meanings in the literature on space and landscape.
cognitively universal directionality component that is the locus of the what/where distinction. In other words, it is the directionality markers that are the defining features of what- and where-nouns, not the configurational terms, which are more language-specific.

7.3 Lokono what/where distinction

Before I demonstrate how the what/where distinction operates in Lokono, a short introduction to the Lokono grammar and directionality paradigm is necessary. The data presented here represent the Surinamese variety of Lokono as it is spoken in the Para district. The data come from a collection of recorded narratives, conversations, and stimulus-based elicitation sessions focused on the grammatical encoding of spatial relations. The consultants who participated in the recordings were both men and women, ranging from 40 to 90 years of age. The provenance of examples—that is, the speech genre, the location, and year of the recording—is given in each case.

Lokono has a split active/stative verb system (see § 3.4.1). Active verbs lexicalize actions and can attach a personal prefix to encode the subject. Stative verbs, on the other hand, encode states, and their subjects can be expressed with the personal enclitics—the same enclitics that encode the object of transitive verbs. Both types of verbs can combine with a number of suffixes expressing tense, aspect, and mood. In this chapter I focus on the nominal domain, therefore I do not discuss the verbs in detail. The active/stative distinction is, however, an important mechanism disambiguating the conflated location and goal directionality discussed below.

Lokono nouns are categorized along several dimensions. It is worth pointing out that all three types of nominal categorization discussed below have their specific grammatical locus and exponents. Lokono nouns are grouped into masculine nouns, limited to nouns denoting Lokono males, and non-masculine nouns, including terms for all other entities (see § 3.3.1). The distinction manifests itself on 3rd person pronouns, prefixes, enclitics, demonstratives, relativizers and a few other morphemes, as illustrated in examples (268).

(268) Lira li sathi wadili.

\[
\begin{array}{ccc}
\text{li–} & \text{li} & \text{sa–} & \text{ʃi} & \text{wad} & \text{ili} \\
\text{DEM:–MED} & \text{DEM:M} & \text{good–SHJ.REL:M} & \text{man} \\
\end{array}
\]

‘He is a good man.’ (Cassipora, 2009, elicitation)

In (268) the gender distinction recurs throughout the equative clause. It is encoded by the demonstrative lira functioning as the argument of the predicate. It also reappears in the nominal predicate, which contains the verb san ‘good’ combined with a relativizer and the masculine demonstrative li, agreeing in gender with the head of the noun phrase wadili ‘man’.

Nouns are also divided into alienable and inalienable (§ 3.3.2). The possessor in Lokono can be expressed by a noun preceding the possessed noun or a personal prefix attached to it—the same prefixes that encode the subject of active verbs are used to encode the possessor. Alienable nouns receive additionally a possessive suffix when possessed, for instance, da-yoro–n ‘my cassava press’ (lit. ‘1SGA–
cassava.press–POSS’). Inalienable nouns, on the other hand, are characterized by the absence of a possessive suffix when possessed, for instance, da–duna ‘my arm’ (lit. ‘1SG.A–arm’). There are also a number of irregular and suppletive possessed forms, and a few nouns that cannot be possessed at all.

When quantified, Lokono nouns can be classified as single object nouns, set nouns or mass nouns (Rijkhoff 2002). Single object nouns and set nouns combine directly with numerals higher than one. However, only single object nouns encode singular entities, and therefore receive plural marking when combined with numerals higher than one, for instance, bian hiyaro–no ‘two woman–PL’. Set nouns are transnumeral, and therefore remain unmarked for number, for instance, bian pêro ‘two dogs’. Mass nouns do not combine directly with numerals higher than one at all, but necessitate a mensural classifier, for instance, bian mothoko kar–o ‘two sand grain’. The noun mothoko ‘sand’ combines first with the mensural expression karo ‘grain’. The possessive phrase mothoko karo ‘grain of sand’, headed by the set noun kar–o ‘grain’, can in turn combine with numerals.

The Lokono spatial expression consists of a clearly separable configuration and directionality component. Configuration is expressed by a range of configurational nouns, expressing topological, intrinsic, relative, and absolute spatial relations, such as loko ‘inside’ (§ 3.6.4). Configurational nouns are not an obligatory part of the spatial expression, but appear when there is a need to specify the spatial configuration. When used, they follow the Ground-denoting noun and form a possessive phrase with it, for instance, yoro loko ‘inside of a cassava press’. All configurational nouns are inalienably possessed, therefore no possessive marker is necessary in such phrases with the Ground-denoting noun as the possessor.

The directionality markers follow the Ground-denoting noun or the possessive phrase with a configurational noun, if there is one (§ 3.6.3). The location and goal directionality are conflated into one category in Lokono, and are disambiguated by the verb—a cross-linguistically common pattern. A predicate that implies lack of motion signals the location directionality. Example (269) comes from the description of the Picture Series for Positional Verbs stimulus, showing a rope hanging from a tree branch (Ameka, Witte, and Wilkins 1999).

(269) Onabonrokada no.
   onabō–n–ro–ka=da=no
   down–LOC.WHR–ATL–PFV=DIR=3Fb
   ‘It is oriented toward the ground.’ (Cassipora, 2012, elicitation)

In (269) the configurational noun onabo ‘down’ encoding the direction on the abstract vertical dimension is employed. It is one of the two configurational nouns that are never possessed, since it encodes an absolute spatial dimensions. Just like other types of configurational nouns onabo is followed by the location and goal directionality marker –n. In (269), the atelic suffix –ro additionally appears, signaling that the configuration is not fully reached, but that the Figure is merely oriented toward it. The whole spatial expression onabonro ‘towards the ground, downwards’ is combined with the perfective suffix –ka forming a stative clause, the subject of which encodes the Figure. Stative predicates do not encode motion
therefore the location and goal directionality marker –n is interpreted as indicating the location directionality.

A motion predicate, in turn, implies the goal directionality, as in (270), where the same location and goal directionality marker –n is used. Notice that the atelic suffix –ro appears here as well, signaling that the configuration is not achieved. In both (269) and (270) the atelic suffix can be removed, implying that the configuration is reached.

(270) Dôsa konokonro.
   d–oːsa konokō–n–ro
   1SG–go forest–LOC.WHR–ATL
   ‘I went towards the forest.’ (Cassipora, 2011, narrative)

In (270) there is no configurational noun that specifies the spatial relation. The Ground-denoting noun konoko ‘forest’ is combined directly with the directionality marker –n and the atelic suffix –ro. The whole expression functions as an adverbial encoding the goal of motion of the active verb ôsun ‘go’. Importantly, in the next section, a second directionality marker—namely, bihti—is introduced. The two directionality markers, bihti and –n, combine with different types of nouns, dividing the nominal domain into what- and where-nouns. The source directionality has two related forms: the telic âya and the atelic ôya. The via directionality is expressed, in turn, by the suffix –di. The source and via directionalities are insensitive to the what/where distinction, and are therefore not discussed further in the sections below (but see §§ 3.6.3.4 and 3.6.3.5, respectively).

7.3.1 What/where distinction

The location and goal directionality has two formal exponents that divide the nominal lexicon into two distinct categories. First, there is the suffix –n that appeared already in examples (269) and (270) above. Second, there is the free form bihti. The nouns that combine with the –n-marker are henceforth called where-nouns; those that combine with the bihti-marker are called what-nouns. The category of where-nouns includes, for instance, terms for human-made landscape features, such as the alienable noun kabuya ‘field’ in (271).

(271) Bôsa kabuyan!
   b–oːsa kabiya–ŋ
   2SG–go field–LOC.WHR
   ‘Go to the field!’ (Cassipora, 2013, natural discourse)

In (271), the noun kabuya is followed by the directionality marker –n. The expression kabuyan ‘to the field’ encodes the goal of motion lexicalized by the verb.

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90 Notice that in (269), the atelic suffix –ro is part of a stative predicate, resulting in the meaning ‘oriented toward’. This is against Lestrade’s theory, which denies the possibility of extending the telicity distinction to the location directionality (Lestrade p.c.).
The what-category, on the other hand, includes, for instance, terms for people such as the inalienable noun *oyo* ‘mother’ in (272).

(272) *Bôsa boyo bithi.*

\[ \text{Go to your mother.} \] (Cassipora, 2013, natural discourse)

In (272), the inalienable noun *oyo* ‘mother’ is combined with the directionality marker *bithi*; the phrase encodes the goal of motion lexicalized by the verb *ôsun* ‘go’ as well. The reverse combinations *kabuya bithi* and *boyon* are unacceptable. In the followings sections I look in detail at the types of nouns that combine with each of the directionality markers.

It is worth mentioning that when a noun is combined with the location and goal directionality markers, the location or goal implied is unspecified with respect to configuration. This applies to both the what- and the where-marker. In (273) two different nouns appear with the where-marker. The speaker describes the physical location where she left her children—that is, a boarding school, without specifying any configurational relation.

(273) [...] *shikin skoron ye, faretho shikwanro, internatinro.*

\[ \text{Putting them at school, in the city.} \] (Matta, 2011, narrative)

In (273) two nouns that typically combining with the where-marker appear. Importantly, the combination *skoron*, for instance, means ‘at school’, which can imply a location inside the building, on top of the building, or in the vicinity of it. If the spatial relation is informationally salient the relevant configurational noun can be added, forming a possessive phrase with the Ground-denoting noun, for instance, *skoro lokon* ‘at the inside of a school’, with the configurational noun *loko* ‘inside’ and the where-marker. Configurational nouns—as nouns denoting places—always necessitate the use of the where-marker.

7.3.2 What-nouns

The Lokono what-nouns include generic and proper person-, animal-, plant- and object-denoting nouns, and nouns referring to parts of such entities. The category also encompasses pronouns, demonstratives, as well as the question words *hama* ‘what’ and *halikan* ‘who’. The defining feature of what-nouns is their compatibility with the what-marker *bithi* in the location and goal directionality. However, the what-category is internally divided into two subgroups when by the combinatorial possibilities with the telic and atelic what-marker are taken into account.

The first subgroup includes generic and proper names of persons, pronouns, demonstratives, the interrogatives *halikan* ‘who’, *hama* ‘what’, and the noun *(ha)mathali* ‘thing’. All these forms combine with the telic what-marker *bithi* and its atelic equivalent *bithiro*. In (274), for instance, the Ground is expressed by the noun
hamathali ‘thing’. The example comes form a description of the Event Triads stimulus, showing a ball rolling toward a wooden block (Bohnemeyer, Eisenbeiss, and Narasimhan 2001). During this recording, the participant was asked to imagine, however, that the ball is a person, hence the use of the masculine gender prefix to encode the subject of the verb, which is used only if the referent is a Lokono man.

(274) Lokonâha tâ, tora mathali bithi osa.
lo–kôna:–ha ta: to–râ matʰali bitʃi o:sa
3M–walk–FUT far DEM:–MED thing LOC:WHT go
‘He walked far, to that thing (he) went.’ (St. Rose de Lima, 2011, elicitation)

In (274), the noun phrase tora mathali ‘that thing’ is followed by the directionality marker bithi. The whole expression encodes the goal of motion of the verb ôsun ‘go’. Being a free form, bithi can also combine with personal prefixes that refer to animate beings, objects, plants, but not to places. In (275) the third person non-masculine prefix refers to an enclosure into which a ball rolls. The example is a description of a scene from the Event Triads stimulus (Bohnemeyer, Eisenbeiss, and Narasimhan 2001).

(275) Thôsun thibithi barhin […]
tô–oːsâ:–n tʃi–bitʃi baʃi–ŋ
3F–go–NMLZ 3F–LOC:WHT thought–NMLZ
‘Although it went to it […]’ (St. Rose de Lima, 2011, elicitation)

In (275) the Ground is encoded by the prefix attached to the directionality marker bithi. The whole expression again encodes the goal of motion of the verb ôsun ‘go’.

The second subgroup of what-nouns consists of nouns denoting animals, plants, objects, and their parts. These nouns can only combine with the atelic what-marker bitihor, which signals that the configuration is not achieved. In (276), the referent is a bicycle, called by the Lokono faretho darhidikawana, literally ‘white man’s running device’.

(276) Faretho darhidikwana bitihor dandunha […]
fareṭo dâriːdiː–kwana bitʃi–ro d–ândi–ŋ–ha
‘Coming toward the bicycle […]’ (2009, Cassipora, narrative)

In (276) the Ground-denoting noun fartho darhidikwana ‘bicycle’ is followed by the atelic marker bitihor. The whole expression encodes the goal toward which the movement encoded by the verb andun ‘arrive’ is oriented. If one wants to express the telic location and goal directionality with nouns denoting animals, plants, objects, or parts thereof, one has to combine them first with a configurational noun into a possessive phrase, describing a specific spatial relation between the Figure and the Ground. Configurational nouns are the head in such possessive phrases, and belong to the where-category discussed below, therefore the where-marker is invariably used. It is tempting to draw an analogy between the use of configurational nouns with what-nouns to encode the telic directionality, and the use of set nouns
with mass nouns to quantify the referents. In both cases, a possessive phrase is formed, the head of which is a member of the other category (a where-noun or a set noun), rendering the phrase suitable for quantification or localization, respectively.

7.3.3 Where-nouns

The category of where-nouns includes a number of nouns that denote places, for instance, geographic-scale places (e.g., konoko ‘forest’), buildings (e.g., bahu ‘house, building’), configurational nouns (e.g., diako ‘top’), the question word halo ‘where’, and deictic terms. The category is defined by the where-marker –n in the location and goal directionality. The where-marker is typically a reduced variant of the form –mun, which today is rarely used. However, the non-reduced form is still found in quite recently collected texts, showing that the phonological reduction is a new development. In (277) the non-reduced form –mun is combined with a landscape term kabuya ‘field’.

(277) Thôsada kabuya munro.
\[ t^o-o:sa=da \quad kabiy\quad mîn-ro \]
\[ 3_F–go=D\quad field \quad LOC.WHR–ATL \]
‘She went to the field.’ (Patte 2011: 169)

The where-marker has different phonological realizations, although in the orthography adopted by the community it is always written as an <n>. When following the consonant /n/, an epenthetic vowel –i is inserted. When following a diphthong, or a consonant other than /n/, an epenthetic syllable –ni is inserted, as in (278).

(278) Redi Doti of Paranamnin […]
\[ re\quad doti \quad of \quad paranam–pi–n \]
Redi Doti or Paranam–EP–LOC.WHR
‘at Redi Doti or Paranam […]’ (Cassipora, 2012, narrative)

If the consonant /b/, /p/, /t/, /tʰ/ /d/, /k/, or /kʰ/ follow the marker, it assumes the form of a homorganic nasal. If it appears phrase-finally, it is realized as [ŋ]. In all other contexts it has the form [n].

Analogically to the what-category, the where-category is also internally structured with respect to telicity. The nouns from the first subgroup require the where-marker in both telic and atelic contexts. These include generic terms for

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91 Interestingly example (278) shows that the where-marker may still be less bound than presented here. In (278), it seems to operate as an enclitic on a phrasal level applying to two conjoined nouns. However, there is little data to test this hypothesis, and it should be noticed that example (278) is heavily influenced by the contact languages. The place name Redi Dott is of Sranantongo origin, while Paranam is of uncertain Amerindian origin; the conjunction of ‘or’ is borrowed from Dutch. Lokono has no such conjunctions; the equivalent would have to be expressed as two clause, and the where-marker would probably be used twice.
landscape features (e.g., onikhan ‘creek’, konoko ‘forest’, karhow ‘savanna’, horhorho ‘landform’), terms for vegetation patches derived with the suffixes –wkili and –wkaro (see chapter 5), and proper places names. This subgroup also includes numerous locative nominalizations in –nale, derived from verbs encoding an activity or nouns related to an activity, for instance, natikanale ‘their toilet’ from tika ‘feces’. The entities denoted by the locative nominalizations vary from small areas of a forest (e.g., nakodanale ‘their weaving place’, from the verb kodon ‘weave’) to a corner of a room (e.g., danale ‘my part of the traditional thatched house’). In the same subgroup there are also terms for structures, for instance, banabo ‘hut’ and skoro ‘school’ (a borrowing from Sranantongo). The use of place names in the location and goal directionality is exemplified in (279).

(279) Korhopan dôsa kiba.
koropâ–n  d–o:sa  kiba
Korhopa–LOC.WHR 1SGA–go  again
‘I went to Korhopa again.’ (St. Rose de Lima, 2011, narrative)

In (279) the place name Korhopa is combined with the telic where-marker, encoding the goal of motion. The atelic equivalent of (279) is formed by the addition of the suffix –ro to the where-marker.

Configurational nouns constitute another subgroup. Configurational nouns specify the spatial configuration between the Figure and the Ground—they are the equivalents of the English spatial prepositions. Some of them express topological relations such as containment, contact, and proximity. The containment configurational nouns are all related and sensitive to the type of container, for instance, rako ‘inside a liquid’, loko ‘inside a rigid object’, and koloko ‘inside an unbounded container’. Other configurational nouns encode non-topological relations. These include terms for relative and absolute spatial relations (e.g., isa ‘right’ and ayo ‘up’, respectively). In the telic location and goal directionality, many configurational nouns can drop the where-marker and stand unmarked in a spatial expression, as in (280). This differentiates them from first subgroup of where-nouns, which always require the where-marker in spatial expressions.

(280) Iniabo rakoka to shiba.
iniabo rak–O–ka  to  jiba
water  inside[liquid]–LOC.WHR–PFV  DEM:F  stone
‘The stone is in the water.’

In (280) the symbol Ø indicates the slot, in which the optional telic where-marker –n can appear. Historical sources show that the non-reduced form of the where-marker was present in the telic location and goal directionality with configurational nouns, for instance, akulukkumün ‘to/at inside an unbounded container’, the equivalent of koloko(n) today (Schumann and Schumann 1882a). Although this varies per
configuration noun, the unmarked forms are preferred today. Although unmarked configurational nouns can function in spatial expressions, and are usually found in this context, they can also function as the object of the verb. The configurational noun loko ‘inside’, for example, can be used as a mensural expression, as in aba ida loko ‘one calabash’ (lit. ‘one inside of a calabash’). This again depends on the configurational noun. Some nouns are more inherently spatial than others, and their use may therefore be restricted to the spatial expression.

This brings us to the last subgroup of where-marked expressions, which includes only a few terms—namely, the locative demonstrative adverb ya, and its proximal, medial, and distal derivations, as well as the locative anaphoric adverb yo, and the question word halo ‘where’. All these forms can only be used in the spatial expression, and therefore can no longer be classified as nouns. The locative adverb yo and the question word halo ‘where’ combine with the where-marker, but neither of the two can drop it. The interrogative halo ‘where’ is exemplified in (281).

(281)  
Halon bôsabo?  
halô–m b–o:sa–bo  
where–LOC.WHR 2SG–go–PRG  
‘Where are you going?’ (Cassipora, 2011, natural discourse)

In (281) the where-marked interrogative halo ‘where’ functions as an adverbial to the verb ôsun ‘go’. The demonstrative adverb ya and its derivations, on the other hand, have dropped the where-marker in the telic mode completely as in (282), from a traditional Lokono story.

(282)  
Lôsa kida yara, abanbo, ada yabon.  
l–o:sa kida ya–ra–Ø abâ–m–bo  
3M–go again LOC.DEM–MED–LOC.WHR INDF–LOC.WHR–CNTR  
ada yabô–ŋ tree behind–LOC.WHR  
‘He went again here nearby, somewhere behind a tree.’ (Bernharddorp, 2011, narrative)

In (282), the distal locative demonstrative yara, encoding the goal of movement, is unmarked for location and goal directionality. Notice that two more spatial expressions in the clause, both of which contain the where-marker. The telic where-marker is never attested with the demonstrative adverb ya. However, when used in the atelic mode the where-marker –nro is employed, as in (283), from the description of a creek which harbors malevolent spirits.

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92 The configurational noun khona developed two distinct meanings. When used with the where-marker, it has a non-spatial meaning ‘about’. When unmarked, it can only be read as a configurational noun meaning ‘adhering to the surface; along’.
In (283) the same distal demonstrative encodes the atelic goal toward which the movement is oriented. The atelic where-marker is obligatory with demonstrative adverbs.

In conclusion, it should be reiterated that what- and where-nouns are defined by the two location and goal directionality markers, and are internally structured with respect to telicity, as summarized in Table 53.

<table>
<thead>
<tr>
<th>Category</th>
<th>Atelic</th>
<th>Telic</th>
<th>Object of verb</th>
<th>Type of expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>what</td>
<td>bithi</td>
<td>bithi</td>
<td>yes</td>
<td>halikan ‘who’</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>hama ‘what’</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>hamathali ‘something’</td>
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<td></td>
<td>pronouns</td>
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<td>demonstratives</td>
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<td>person-denoting nouns</td>
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<td>config</td>
<td>yes</td>
<td>object-denoting nouns</td>
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<td>plant-denoting nouns</td>
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<td>animal-denoting nouns</td>
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<td>part-denoting nouns</td>
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<td>-n</td>
<td>yes</td>
<td>generic landscape terms</td>
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<td>place names</td>
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<td>terms for structures</td>
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<td></td>
<td>locative nominalizations</td>
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<tr>
<td>-n or zero</td>
<td>yes (some)</td>
<td>no</td>
<td>configuration nouns</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>halo ‘where’</td>
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<td></td>
<td></td>
<td></td>
<td>yo ‘locative anaphoric adverb’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>demonstrative adverb ya</td>
</tr>
</tbody>
</table>

The atelic marking divides the nominal domain into two large categories: what-nouns are marked with bithi and where-nouns with -nro. The telic marking subdivides both categories. What-nouns are split into nouns that combine with the telic bithi, and those that cannot combine with it, and therefore necessitate a different strategy—namely, the addition of a configurational noun—to encode telic configurations. Where-nouns are divided as well with respect to telicity into nouns that require the where-marker in the telic mode, and those that can drop it. Interestingly, as one moves from what- to where-nouns, the gradual loss of nominal features, such as the ability to function as the core argument of the verb, can be observed. The last subgroup of terms combining with the where-marker can therefore no longer be considered nominal. The association of the where-nouns with the decrease in nominal character and the increase in the verbal features has also been noticed in other languages, for instance, in Makalero (Juliette Huber p.c.).
7.3.4 Borderline cases

The categories of what- and where-nouns are typified by fuzzy boundaries and, though generalizations can be made, there are also idiosyncratic combinations. Importantly, these are explainable through mechanisms such as lexicalization and grammaticalization. The term âmun ‘by, next to’, for instance, appears in the location and goal directionality with what-nouns. From the description above in this case the what-marker or a configurational noun followed by the where-marker is expected. It turns out that historically âmun is indeed a where-marked configurational noun. The comitative marker oma has a secondary function as a configurational term encoding proximity. It was combined with the non-reduced form –mun, from which the where-marker –n developed through phonological reduction. The combination omamun, attested in historical sources, was shortened to âmun and today functions as a complex directionality marker (§ 3.6.3.6).

Such synchronically opaque forms, however, are fairly rare. More interesting for the discussion of the what/where distinction is the synchronic boundary between what- and where-nouns. A number of nouns can combine with both the what- and the where-marker. Importantly, the differential directionality marking results in predictable systematic changes in meaning, showing that the what/where distinction is synchronically transparent and semantically motivated. Category shifts are possible with a few types of nouns—namely, the person-denoting noun datra ‘doctor’, some object-denoting nouns, some relational nouns, a few landscape terms, and the indefinite pronoun aba. The unexpected combinations shed light on the semantic motivation of the distinction. The five borderline cases are listed in Table 54 and discussed below.

<table>
<thead>
<tr>
<th>What-noun reading</th>
<th>Where-noun reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>doctor (person)</td>
<td>Person-denoting noun.datraclinic (institution)</td>
</tr>
<tr>
<td>tree</td>
<td>Object-denoting nouns.olo.place named after a tree</td>
</tr>
<tr>
<td>face (part)</td>
<td>Relational nouns.shilbo.front (spatial region)</td>
</tr>
<tr>
<td>landform (on a map)</td>
<td>Landscape terms.horhorho.landform (landscape feature)</td>
</tr>
<tr>
<td>someone/something</td>
<td>Indefinite pronoun aba.sometomesomewhere</td>
</tr>
</tbody>
</table>

Table 54.

The what- and where-marking throughout the Lokono lexicon.
7.3.4.1 Person-denoting noun *datra* ‘doctor’

Person-denoting nouns normally do not combine with the *where*-marker—that is, they belong to the *what*-category. An important exception is the noun *datra* ‘doctor’, borrowed from the *lingua franca* Sranantongo. The noun *datra* combines with the *what*-marker, as expected, but also with the *where*-marker. The expected combination *datra bithi* is used when the location or goal is a physical person, as in (284).

(284) *Dôsa koba datra bithi.*
\[
\text{d–o:sa=koba datra bitji}
\]
\[
1SG=go=REM.PST doctor LOC:WHT
\]
‘Long time ago, I went to the doctor (a person).’ (Cassipora, 2013, narrative)

In (284) the goal of movement is a physical person; the sentence could be used, for instance, to describe movement toward a doctor standing in the hallway of a hospital waiting for a patient. On the other hand, the unexpected combination *datran* cannot be used when movement toward a physical person is implied. Rather, the combination *datran* means that the goal is a location—the place where the doctor works, as in (285).

(285) *Wôsa bi datran.*
\[
\text{w–o:sa=bi datr–ŋ}
\]
\[
1SG=go=REM.PST doctor–LOC:WHR
\]
‘We went to the doctor (a clinic).’ (Cassipora, 2011, natural discourse)

As such the distinction is reminiscent of the English use of the morpheme ‘s (cf. *I went to the doctor* vs. *I went to the doctor’s*). The shift from the *what*-category to the *where*-category results in this case in the change of the referent from a person to a building or institution in which the person works. Interestingly, the *where*-marker on a person-denoting noun cannot be used to imply the location where someone lives; hence it is not possible with proper names of people. It is also not possible with Lokono names for professions derived with the agent nominalizer –*rhin*, for instance, *yokhârhin* ‘hunter’ (from *yokhan* ‘hunt’). This may be attributable to the fact that most of such professionals cannot be associated with a specific location (e.g., *kodârhin* is ‘someone who is good at weaving’ not ‘someone who works at nakodanale ‘their weaving place’). It is possible that the exceptional case of *datra* is a case of semantic borrowing. The word *datra* refers to both the person and the institution in the source language Sranantongo. Small clinics, in which such doctors work, in Sranantongo and Surinamese Dutch called *poli*, are now found in most Lokono villages. On the other hand, the Lokono medicine men called *semethi* have become a thing of the past. In any case, the combination *semethin* with the *where*-marker was rejected by the consultants, even though the medicine men did have their own workshops where they practiced their art. Importantly, the differential use of the *what*- and *where*-markers shows that the *what/where* distinction is productive and can be applied to new lexical items, such as borrowings.
7.3.4.2 Object-denoting nouns

Object-denoting nouns belong to the what-category. Van Baarle and colleagues (1989: 76), however, give an example of a what-noun appearing with the where-marker—namely, koyarha ‘dugout canoe’. According to the authors, when combined with the where-marker, the combination koyarhan implies that the location or goal is a static canoe. On the other hand, when combined with the what-marker, the combination koyarha bitihiro implies that the location or goal is a canoe that is moving. Nevertheless, it is interesting that at least to some speakers the combination is acceptable, and that the relevant parameter is motion or movability—a parameter that appears both in Lyons’ analysis of first-order entities and in Talmy’s definition of prototypical Figures and Grounds.

From the data collected in Suriname, an interesting pattern appears when a place is named after an object-denoting noun. In Lokono this is quite common as many creeks and their parts are named after particular trees. Take as an example the noun ôlo denoting a species of the Trattinnickia genus. When referring to a particular exemplar of the species, ôlo follows the usual pattern of what-nouns. It combines with the what-marker in the goal and location directionality, as in (286).

(286) Thôsa ôlo bitihiro.
	F-A-o:sa o:lo bit[i-ro
	3FA-go tree LOC:WHT-ATL

‘She went toward the tree (Trattinnickia species).’

However, there is also a creek in the Cassipora area called Ôlo named after the trees that flank its banks. The creek used to be a resting area for hunters coming back home from long hunting trips. As a proper place name, Ôlo combines with the where-marker as in (287).

(287) Ôlon nâkuba koba.
	o:lo–ŋ n–a:kiba=koba
	Ôlo=LOC:WHR 3PLA=breathe=REM,PST

‘Long time ago they rested at the Ôlo creek.’ (Cassipora, 2012, narrative)

The combination Ôlon cannot encode location or goal if a particular exemplar of an ôlo tree is the Ground. This type of semantics must be expressed either by the what-marker or by a combination of a specific configurational noun with the where-marker, as is the case with other what-nouns. The combination Ôlon implies to referent of the noun must be a place (i.e. a creek), not an object (i.e. a tree). The shift from the what-marker to where-marker results in this case in the change of the referent from an object to a landscape feature named after the object. It is not clear how productive this pattern is today, but it is strikingly similar to the datra case, in which case a place is named after a person associated with it. In the corpus of place names a few examples of this pattern can be found (e.g., Kofa ‘creek named after Clusia species’; Pakorhi ‘village named after Plation insignis’; Hobo ‘creek named after Spondias mombin’). Due to linguistic and cultural loss, however, many place...
names have been forgotten and new places are often named in Sranantongo or Dutch instead of Lokono (see chapter 6).

7.3.4.3 Relational nouns

Relational nouns denote parts of entities and normally combine with the what-marker or a configurational noun, followed by the where-marker, as is typically the case with what-nouns. This is exemplified in (288), in which the Goal of motion is the body part koti ‘foot’.

(288) *Thurhibiswa dakoti bithiro.*

\[
\text{3F} \text{REFL} \text{FOOT} \text{LOC} \text{ATL}
\]

‘It rolled toward my feet.’ (Cassipora, 2010, elicitation)

However, there are some relational nouns that readily combine with the where-marker as well. The attachment of the where-marker to such nouns has an interesting effect. A what-marked relational term is used when the location or goal is the named-part itself (e.g., *duna* bithiro ‘toward the arm, side’). A where-marked relational noun, on the other hand, implies that the location or goal is the spatial region that is adjacent to or projected from the part (e.g., *dunanro* ‘toward the side of’). This is exemplified in (289).

(289) *Adayali shikwa dunan.*

\[
\text{God} \text{HOUSE} \text{POSS} \text{ARM} \text{LOC} \text{WHR}
\]

‘at the side of the church’ (lit. at the arm of god’s house)

In (289), the goal of motion is not the part of the building itself, but a spatial region projected from the side. Relational nouns that have been attested with the where-marker include terms such as shiri ‘nose’, shi ‘head’, shibo ‘face’, toro ‘heel’, duna ‘arm’, koti ‘feet’, rhebo ‘edge’, boloko ‘tip’, anaku ‘middle’. Through the attachment of the where-marker, the relational nouns in question become de facto configurational nouns expressing intrinsic spatial relations—that is, spatial relation established by projecting a spatial region form the relevant part. It should be mentioned that the development of configurational terms from relational nouns, including body part terms, is a cross-linguistically attested phenomenon (e.g., Heine, Claudi, and Hünnefelder 1991; Heine 1997).

7.3.4.4 Landscape nouns

Nouns denoting landscape features normally combine with the where-marker. However, some of them can combine with the what-marker typical of object-denoting nouns. The landscape term *horhorho* ‘landform’, for instance, normally appears with the where-marker, as in (290), which comes from a description of a
The speaker here narrates his imaginary travel through the depicted landscape.

(290) Dirhibiswa horhorhonro.

\[
\begin{array}{ll}
\text{d–i} & \text{ɨ}\
\text{b} & \text{i}\
\text{wa} & \text{ho}\
\text{o} & \text{ɽ}\
\end{array}
\]

1SG – roll.REFL landform – LOC.WHR – ATL

‘I rolled toward the landform.’ (Cassipora, 2012, elicitation)

The landscape term horhorho ‘landform’, described in detail in chapter 4, can refer to any type of landform, and typically combines with the where-marker, as in (290), where the phrase horhorhonro encodes the goal of motion: the bottom of the valley. However, if one talks about a landform on a map or a landform viewed from a distant place, the what-marker can be employed, as in (291).

(291) Dadukha aba waboroko horhorho bithiro.

\[
\begin{array}{ll}
\text{d} & \text{a}\
\text{d} & \text{ɨ}\
\text{k} & \text{h}\
\text{a} & \text{aba}\
\text{waboroko} & \text{ho}\
\text{o} & \text{ɽ}\
\end{array}
\]

1SG – see INDF road landform LOC.WHR – ATL

‘I see a road toward the landform.’ (Cassipora, 2012, elicitation)

In this case, the what-marker triggers the reading of a perceptually more bounded instantiation of a landform—that is, one that fits within the visual field—or an object that represents a landform on a map. In both cases, rather than a large-scale landscape feature, a delimited object is implied. This contrast can be captured well with questions. Horhorho is an answer to the question about a place: Halonro? ‘Toward where?’ Horhorho bithiro is an answer to the question Hama bithiro? ‘Toward what?’ It remains unclear how productive this type of semantic shift is; it is also attested with the noun onikhan ‘creek’ and konoko ‘forest’.

7.3.4.5 Indefinite pronoun aba

Lokono numerals are classified as nouns. Not surprisingly, they share the capability to combine with the location and goal directionality markers. Interestingly, the numeral aba ‘one’, which functions as the indefinite pronouns, can combine with the where-marker, typical of the where-nouns. The resulting combination aban means ‘somewhere’ and refers to a place. In (292), the speaker describes the travels of the ancestors of Cassipora, who moved from one location to another, before finally settling down where the present village is located.

(292) Nashifodâka abanro kiba.

\[
\begin{array}{ll}
\text{n} & \text{a}–\text{ʃ}\
\text{i} & \text{f}\
\text{od} & –\text{a}–\text{ka}\
\end{array}
\]

3PL – turn.INTR–PFV INDF – LOC.WHR again

abā – n – ro 

kiba

‘They turned around toward somewhere again.’ (Cassipora, 2011, narrative)

In (292) the combination abanro ‘toward somewhere’ with the atelic suffix encodes the goal of movement of the verb shifodan ‘turn around’. Importantly, the same pronoun combined with the what-marker implies that the referent is either a person,
animal, plant, or an object, but not a place. In (293), from the story in the online Appendix IV, the indefinite pronoun aba is additionally marked as masculine, therefore limiting the scope of referents to Lokono men only.

(293) Li abali bithiro thôsa.

\[
\begin{array}{llll}
\text{DEM:M} & \text{INDEF=M} & \text{LOC.WHT=ATL} & \text{3F\text{-}go} \\
\end{array}
\]

‘She went to the one man.’ (Cassipora, 2009, narrative)

In the case of indefinite pronoun aba the referent changes therefore in a predictable manner. When what-marked the indefinite pronoun indicates that the location or goal is a person or an object. If where-marked, the combination aban encodes a location or a goal that is a place.

7.4 Discussion

In the previous sections I demonstrated how the what/where distinction operates in Lokono. I first identified two types of nouns defined by the different location and goal directionality markers, and subsequently discussed a five cases of semantically motivated category shifts. In the present section, I discuss the data in the light of the bulk of knowledge about nominal categorization in general. The main aim is to show the parallels between the what/where distinction and other types on nominal categorization, such as the mass/count distinction. Based on the preceding description, in the following sections I also put forward a few hypotheses about the what/where distinction in general that are put to the test in chapter 8, in which a comparative analysis of the dichotomy is presented.

7.4.1 Grammatical locus

The what/where distinction manifests itself in a specific linguistic context—namely, the directionality component of the spatial expression. In Lokono this distinction boils down to the use of the what- and the where-markers in the location and goal directionality. The markers used to be syntactically equivalent, but today the where-marker is a bound form –n, while the what-marker bitki is a free form. The explicitness of the directionality marking varies per language; the distinction may sometimes be obscured. In English, for instance, it is the anaphoric elements here/there/it/him/her used with the directionality markers that hint at the category membership. Not surprisingly therefore Whorf’s (1945) observations about nouns denoting cities and countries led him to call this group of nouns a cryptotype. On the other hand, in other languages the distinction may be absent or one of the categories can include virtually all nouns.

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93 Noun categorization is understood here in a general way. A nominal category is defined by the equivalent treatment of its members by a certain linguistic feature. This definition only partly overlaps with the more specific idea of noun classification (cf. Aikhenvald 2003).
However, the specificity of the locus of the what/where distinction does not make it any different from other noun categorization systems. The mass/count distinction, for instance, manifests itself only in the case of quantification. Both quantification and directionality are cognitive universals, clearly related to the distinctions they host. Importantly, just like quantification in the case of the mass/count distinction, directionality is a cross-linguistically attested locus of the what/where distinction. A preliminary survey of the grammatical descriptions of typologically distinct languages shows that, in spite of the vast differences in the expression of directionality, the what/where distinction reappears only in this context (Bowern 2012; Buell 2007; Hill 1996; Huber 2014; Woodbury 1975). Future research should focus on the interaction of the different directionality distinctions with the what- and where-nouns. It should be determined how the fact that the what/where distinction is usually found in the location and goal directionality and not in the source or via directionalities relates to the body of literature about the cognitive goal bias (cf. Kopecka and Narasimhan 2012, Part II).

7.4.2 Internal structure

In analogy to the mass/count distinction, the what/where opposition is organized around two extremes, the what-extreme and the where-extreme. However, the internal structuring of the categories is more complex. In the what-category, person-denoting nouns, pronouns, demonstrative pronouns, the question words halikan ‘who’, hama ‘what’, and the noun hamathali ‘thing’ receive a special status. Only these nouns can combine with the what-marker in its telic and atelic form. This internal division is not surprising, if one recalls the special status of person-denoting nouns (Lyons 1977:442–443), and it can be expected to reappear in other languages. It is, however, unclear why hama and hamathali, which do not refer to people, but to objects are found in this subgroup. Interestingly, the remaining what-nouns, if used in the telic mode require a configurational noun. This is reminiscent of the use of mensural terms with mass nouns, if there is a need to quantify them. Both configurational nouns and mensural expressions form a possessive phrase with the relevant noun from one category, rendering the expression compatible with the markers of the other category.

Similarly, within the category of where-nouns, configurational nouns have a special status. In this case, the where-marker can be dropped in the telic mode. This subcategory includes nouns that are to some extent inherently spatial, and languages will differ as to what falls into this subgroup, if such a subgroup is distinguished. Finally, the very extreme of the where-category—that is, deictic terms—can in fact easily escape attention, as they may be quite far removed from prototypical nouns, and be classified as adverbs or even verbs.

Importantly, the internal structuring of the two categories as well as the existence of borderline cases imply that nouns can be ordered from those that typify one extreme or the other, forming a cline. Languages, in turn, choose where to place the

94 Notice that in English container Grounds, also do not necessitate the directionality goal preposition to, for instance, Put the bunny back into/in the box (Nikitina 2008).
cut-off point on the cline. The precise membership of the categories will therefore be language-specific, just as in the case of the mass/count distinction. Nonetheless, there will be cross-linguistic tendencies as to what terms fall into which category due to the ontological basis of the distinction. I hypothesize that telicity interferes with the two categories, since it is a part of the directionality paradigm that is inextricably linked to boundedness, which is one parameter that clearly underlies the distinction. The role of telicity, however, is not yet clear.

7.4.3 Ontological basis
Some what- and where-nouns are flexible and allow for category shifts. Just as in the case of category shifts in the domain of countability, the change of the category results in systematic semantic changes. At its most extreme, in the mass/count distinction this takes the form of the so-called Universal Grinder (Pelletier 1975). Pelletier notices that most count nouns can be forced into a syntactic frame of a mass noun, resulting in a change of meaning, as in At the site of the accident, there was dog all over the street. In the case of the Universal Grinder a count noun receives a mass reading when placed in the syntactic frame of a mass noun. In the borderline cases discussed above, the change of the category from what to where involves a shift from a perceptually more bounded and more delimited entity (person, object, object part, feature on a map) to a perceptually less bounded and less delimited entity (building, institution, place, spatial region, real landscape feature). The change to the where-category often entails larger size, and immobility. The systematic semantic changes suggest that the what/where distinction has an ontological basis. This insight appeared already in the theoretical work of Lyons (1977), Landau and Jackendoff (1993), and Mackenzie (2005). Cablitz (2008) has demonstrated similar category shifts and argued also for their ontological basis in the Marquesan language. It remains an open question how systematic the changes are. In other words, it should be investigated whether we can speak of a Universal Localizer analogous to the Universal Grinder in Lokono and other languages. The shift from an object-denoting noun to a place named after the object is one possible candidate for such a construction (§ 7.3.4.2).

7.4.4 Functional load
I hypothesize that the what/where distinction is a reflection of the noun’s likelihood of functioning as the Figure or the Ground. Though Figure/Ground constellations are relative, on the level of the human experience of the world, or to be more precise the Lokono experience of the world, some constellations are more likely than others. The what/where distinction manifests itself in the spatial expression, the sole function of which is to encode the spatial relation between Figures and Grounds. Importantly, a tendency can be noticed regarding the form of the markers. What-nouns receive more overt marking than where-nouns. In the former case, a disyllabic free form bithi is used; in the latter the suffix –n appears. Moreover, the more inherently spatial the noun, the less marking, therefore, configurational nouns can optionally drop the telic marker. Deictic terms—which have lost their nominal character—remain unmarked in the telic directionality. In other words, what-nouns
require special linguistic means to function as the Ground, while where-nouns necessitate less, and sometimes even no marking at all to function as the Ground. These formal tendencies go hand in hand with the changes in the ontological properties of the referents. Perceptual boundedness and the (often) concomitant capability of displacement, small size, and crisp boundaries appear to typify the referents of what-nouns. Lack of these features is associated with where-nouns. As such, the what/where distinction is an indicator of how marked a noun has to be in order to be used as the Ground in a spatial expression. In chapter 8, I look in more detail at the nominal spectrum ranging from what- to where-noun in three languages, demonstrating that cross-linguistically the distribution of nouns in the two categories is not accidental, but indeed forms a cline from prototypical Figure-denoting nouns to prototypical Ground-denoting nouns.

The question remains why languages have this distinction in the first place. In his overview of noun classification Senft (2010:678) reminds us of Greenberg (1978), who noticed that nouns are particularly notorious for being the locus of categorial distinctions.95 This categorial richness of nouns has been attributed to their discourse persistence. In Greenberg’s (1978) view, categorization helps delimit the reference of a noun and keep track of it as the discourse unfolds (see also Corbett, 1991 on gender). Two facts support the hypothesis that this may motivate also the what/where distinction. First, it should be kept in mind that spatial language may be central to language structure at large (the localist view) and to language development (Piaget and Inhelder 1997). Second, it is evident that the Figure/Ground constellation lies at the heart of spatial language and cognition. The two facts and the Greenbergian discourse persistence of nouns may explain why nouns are categorized as denoting the what and the where—that is, as prototypical Figures and as prototypical Grounds.

7.5 Conclusions

In the linguistic literature, little systematic attention has been paid to the what/where distinction, especially from the perspective of nominal categorization systems and its cross-linguistic manifestations. In this chapter, I have discussed the what/where distinction, as it operates in Lokono, and demonstrated its similarities to other nominal categorization systems such as the mass/count distinction. I argue that the what/where distinction encodes the likelihood of a noun functioning as the Figure or the Ground in the spatial expression. What-nouns encode entities that are prototypical Figures, while the where-nouns encode entities that are prototypical Grounds. Both categories are internally complex. The what/where distinction is found in the cognitively universal directionality component of the spatial expression, and takes the form of the differential directionality marking. Nouns belonging to the where-category are less marked than nouns belonging to the what-category. The distinction is semantically motivated and based on the ontological properties of the referents. This becomes evident in the situations in which category shifts are

95 Though notice verb classification (e.g., McGregor 2002).
possible, resulting in systematic changes in meaning. More perceptually bounded entities tend to belong to the *what*-category, and less perceptually bounded entities tend to belong to the *where*-category. Future research should determine what is the relation of the distinction to other cognitive systems and processes. Bearing in mind the role of spatial language, and the Figure/Ground constellations in particular, as source domains for the structuring of other domains, far reaching ramifications can be expected.
8. Comparative study of what- and where-nouns

Cognitive geography is the study of cognition about geographic phenomena (cf. Montello 2009a). Within this framework, geographic entities are investigated through the prism of, mostly human, cognitive processes and systems such as memory, perception, reasoning, learning, and language. This strand of research has yielded a number of studies, encompassing a vast variety of topics, for instance, wayfinding, navigation, landmarks, route selection, environmental preference, and cognitive maps (for a review of the literature see Mark et al. 1999a; Montello 2013, 2009b). A full account of the potential importance of such research is beyond the scope of this introduction. It is beyond doubt, however, that in the era in which Geographic Information Systems are capturing the whole Earth and access to such information is becoming omnipresent, technological advancement is inextricably linked to the understanding of human cognition of geographic space (Montello and Freundschnuh 2005; Montello 2009b).

One of the fundamental, though neglected, questions of cognitive geography is whether the way we conceptualize entities on the geographic scale (e.g., mountains, rivers) differs in any significant and systematic way from how we conceptualize entities on the subgeographic scale (e.g., chairs, tables). The latter type boasts a long-standing tradition of cognitive research à la Rosch (1973; 1978), which the former type lacks. In the 1990s, Mark and colleagues brought this issue to the table with a series of papers, a theory of geographic entities, and a pilot experiment with human subjects designed to test it (Mark 1993; Mark, Smith, and Tversky 1999; Smith and Mark 2001; Smith and Mark 1998). The question they asked was whether the bulk of knowledge gained from the studies of the categorization of subgeographic entities could be extended to the geographic domain (e.g., Cantor and Mischel 1979; Johnson-Laird and Oatley 1992; Morris and Murphy 1990; Rosch 1975). According to Mark and colleagues, the answer is negative—the way we conceptualize geographic entities is fundamentally different from the way we conceptualize entities on the subgeographic scale. They argue that this contrast is a reflection of the differences between the two types of entities with respect to five ontological properties: location, size, perceptual boundedness, boundary type and texture of boundary.

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96 I would like to thank Kees Hengeveld, Eithne Carlin, and Juliette Huber for discussing the topic with me and for feedback on earlier versions of the article on which this chapter is based. I also would like to thank the four reviewers of Linguistic Typology for their feedback on the article.

97 The use of the term *scale* implies here the human as the point of reference. If human cognition and language structure indeed abstract from the real world, then it is only through the prism of human experience. Interestingly, today we have also access to micro-scales of bacteria and macro-scales of galaxies through sensory prosthesis such as microscopes and telescopes. I am here concerned only with the world observable to the bare human eye (and other senses).

98 Mark (p.c.) prefers today in fact the term *geographic feature* rather than *geographic entity* that I use in this chapter, restricting the term *entity* to the subgeographic domain.
Independently of the research in cognitive geography, theoretical claims of the distinctive status of geographic entities were formulated in linguistics. Semantic theory on the whole overlooked the domain of geographic entities, but the topic was taken up by Whorf (1945), Lyons (1977), and more recently by Mackenzie (2005) and Cablitz (2008). Similarly to cognitive geographers, Lyons (1977), for instance, argues that the ontological properties of geographic entities set them apart from subgeographic entities. This two-fold division can be reflected in linguistic expression. Terms denoting geographic entities may be grammatically distinct from terms denoting entities on the subgeographic scale. The question arises whether cognitive geographers and linguists are looking at the same phenomenon from different angles, and if yes, whether both disciplines could benefit from an integrated approach.

To answer this question I first define the concept of linguistic categorization and outline a theory of spatial meaning adopted in this thesis (§ 8.1). I then give a critical overview of previous linguistic studies relevant to the topic (§ 8.2). After this theoretical introduction, I present empirical evidence from three genetically unrelated and geographically distant languages that shed new light on the claims made by cognitive geographers as well as linguists. This comparative study shows that the languages distinguish two types of nouns, labeled here what-nouns and where-nouns, on the basis of spatial marking. Based on the small convenience sample, a preliminary cline is proposed showing the likelihood of a noun being categorized as a what- or a where-noun (§ 8.4). Subsequently, I provide a short background to the theory of entities proposed by Mark and colleagues and scrutinize the distribution of the nouns along the what/where cline with respect to their ontological features. The analysis of two categories reveals that the entities encoded by such nouns—that is what-entities and where-entities, respectively—differ with respect to some of their ontological properties (§ 8.4.1). The analysis sheds new light on which of the ontological properties identified by geographers may underlie the observed grammatical patterns in the three languages.

8.1 Linguistic categorization

Bearing in mind that the notion of category is not uniform across different disciplines (cf. Cohen and Lefebvre 2005), I first elaborate upon what I mean by linguistic categorization. Following Mervis and Rosch (1981), I assume a broad definition of categorization, namely the situation:

[…] whenever two or more distinguishable objects or events are treated equivalently. This equivalent treatment may take any number of forms, such as labeling distinct objects or events with the same name, or performing the same action on different objects.

Mark’s new nomenclature is intended to reflect the ontological disparity between the geographic and subgeographic domain.
Linguistic categorization, in turn, is understood as the “equivalent treatment” of a linguistic form with respect to a certain linguistic feature (e.g., phonetic, semantic, syntactic). In English, for instance, nouns are categorized as mass nouns such as rice, and count nouns such as cup, based on their linguistic behavior with quantifying expressions. The former cannot directly combine with the indefinite article (*a rice) or with numerals (*two rices); they need an accompanying quantifier (two pounds of rice). The latter combine directly with the indefinite article (a cup) and numerals (two cups). Such linguistic categorization has been argued to reflect the semantic content encoded in English nouns, which reflects the ontological properties of the referents. Mass nouns denote shapeless, but homogenous entities, therefore they cannot be counted. Count nouns denote entities characterized by shape and lack of homogeneity, and thus can readily be counted (e.g., Rijkhoff 2002). Importantly, if a mass noun appears in a syntactic frame of a count noun, systematic changes in meaning follow (e.g., two waters ‘two glasses of water’). And vice versa, if a count noun appears in the syntactic frame of a mass noun, its meaning changes. Pelletier (1975) calls the latter scenario the Universal Grinder exemplified by the English sentence: There was dog on the street. Moreover, which concepts nouns encode differs across languages, a fact known to many students of English as a second language trying to learn which nouns are countable and which are not. Finally, not all languages make the distinction in the first place (cf. Massam 2012 for a comprehensive overview of the complexity of the mass/count distinction).

Though this study is only concerned with linguistic categorization, it should be kept in mind that there is an ongoing discussion about the possibility that linguistic categorization interacts with non-linguistic cognitive processes. Experiments with arbitrary categories show that linguistic categories influence object recognition (cf. Gauthier, James, and Curby 2003 for an overview of such studies). Regarding the mass/count distinction in natural languages, there is no concluding evidence that linguistic categories affect non-linguistic conceptual categories (see Papafragou 2005 for a discussion). As far as the domain of spatial language is concerned, it has been demonstrated that linguistic categorization can determine non-linguistic performance. The dominant linguistic frame of reference conditions, for instance, how speakers resolve non-linguistic spatial tasks (Levinson 2003; Levinson 1996). Future research should investigate the relation between the linguistic categorization discussed in this chapter and other cognitive systems and processes.

Since the distinction described here is inextricably linked to the language of space, a theory of spatial meaning needs to be introduced. Cross-linguistically spatial expressions show a great variety of forms and functions (Ameka and Levinson 2007; Levinson and Haviland 1994; Levinson and Wilkins 2006). In spite of this variation, spatial meaning can be decomposed into two elements: configuration and directionality (Lestrade 2010). The former describes the spatial

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99 The terms directionality and configuration are used in keeping with the theory proposed by Lestrade (2010), which builds upon earlier work by Kracht (2008; 2003; 2002). They
relation that holds between the Figure, the entity to be located, and the Ground, the entity with respect to which the Figure is located (Talmy 1975). We can distinguish topological (e.g., English in, on, next to), relative (English left of, right of), intrinsic (English in front of), and absolute spatial relations (English north of, south of) (Levinson and Wilkins 2006). It is in the domain of configurational relations that languages show greatest variation of spatial meanings (Bowerman and Gentner 2009; Levinson, Meira, and the Language and Cognition Group 2003; Tabakowska, Choinski, and Wiraszka 2010).

Directionality, on the other hand, is the change of configuration over time. There are three universal primary directionality distinctions: location—the absence of change in configuration; goal—the change into a configuration; and source—the change out of a configuration. The distinctions can be exemplified with data from Russian (Nikitina 2009:1118–1119).

(294) Ključi ležat na stol-e.  
  keys lie on table–LOC  
  ‘Keys are on the table.

(295) Ključi upali na stol-Ø.  
  keys fell on table–ACC  
  ‘Keys fell on the table.’

(296) Voz’mi ključi so stol-a.  
  Take keys from table–GEN  
  ‘Take keys from the table.’

In Russian each directionality has its own exponent—the location directionality is encoded by the locative case, the goal directionality by the accusative, and the source directionality by a specialized preposition so and the genitive case. Importantly, as is the case in the languages under study, languages may collapse some or all of the directionality distinctions in one form, leaving disambiguation to the linguistic context, for instance, the semantics of the verb (Nikitina 2009; 2008; Sinha and Kuteva 2008). Moreover, there are also secondary directionality

correspond to the earlier notions of Path and Place (Jackendoff 1990) or Vector and Conformation (Talmy 2000).

100 The terms Figure and Ground were introduced by Talmy (1975) and are equivalent to later Trajector and Landmark (Lakoff 1987; Langacker 1987) and the terms Referent and Relatum (Levett 1996; Miller and Johnson-Laird 1976).

101 I use the term location directionality to indicate what Lestrade (2010) calls place directionality, since the term place exhibits too much semantic variation in the disciplines of linguistics and geography.

102 The examples taken from Nikitina (2009) have been simplified for the purpose of presentation. Consult the original source for a comprehensive discussion of the Russian system.
distinctions such as the atelic equivalents of goal and source—namely, *away from* and *toward*—the situations when the change of configuration is not complete.\(^{103}\)

It is the directionality, not the configuration component of spatial expressions that is the grammatical locus of the distinction reported here. When analyzing linguistic data, attention has to be paid to each primary directionality separately, since they are not equally salient cognitively and may thus vary in the extent to which they encode the distinction (Kopecka and Narasimhan 2012, part II; Regier and Zheng 2007). Finally, though there is some evidence that the secondary telic/atelic distinction plays a minor role in the categorization, I will focus here on the primary distinctions only.

8.2 Geographic entities in linguistic theory

The fundamental role that spatial cognition plays in human cognitive systems and processes is clearly acknowledged in linguistic theory and practice. This is reflected in studies of domains such as emotions, kinship, and time (e.g., Bloom et al. 1999; Herskovits 2009; Levinson 2003; Pütz and Dirven 1996; Talmy 2000). However, the preoccupation with geographic space in linguistic studies is of a more accidental nature.\(^{104}\) In his work on the definitions of parts-of-speech, Lyons attempted to delimit a subclass of prototypical nouns, which would be “focal within the larger class in much the same way that […] a particular area within the total area denoted by a colour term is focal”, (Lyons 1977:440). Relying on a fairly uncontroversial assumption of naïve realism that the world around us is populated for the most part with more or less discrete and moveable objects, he takes the nouns that denote those physical objects to be prototypical nouns. He labels such nouns *first-order nouns* and their real-world correlates *first-order entities*. Lyons explicitly refers to the aberrant ontological properties of geographic entities:

*There are some first-order entities that are either permanently or normally static, rather than self-moving or moveable: but they will not count as first-order entities unless the language so classifies them and they stand out from their environment with respect to their colour, shape or texture. Such aggregates, collections or conglomerations of matter as cliffs, mountains, clouds, lakes and so on, may or may not be perceived and conceptualized as first order-entities: their status is ontologically indeterminate; and they may be treated differently by different languages.*

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\(^{103}\) Finally, there is the via directionality which Lestrade (2010:88) analyzes as either derived from goal and source (*We walked through the forest*) or as location directionality (*We walked through the forest for an hour*).

\(^{104}\) Recently, however, there has been some interest in geographic entities, especially from the cross-linguistic semantics perspective. The first wave of this research explored the encoding of landscape in a number of unrelated languages (Burenhult 2008b). Work by Cablitz (2008; 2006) discussed in this study is the first in-depth description of the what/where distinction.
However, since such nouns are not focal to the nominal spectrum sensu Lyons, he says but little about the particular linguistic phenomena that could distinguish terms for geographic entities from terms for subgeographic entities.

The progress in the study of the distinction between terms for geographic and subgeographic entities has also suffered from a Eurocentric bias—the association of location solely with a class of prepositions. This bias resonates in the work of Landau and Jackendoff (1993), who attempted to relate English prepositions to the *where*-system and nouns to the *what*-system of visual perception in the brain. Interesting as their idea was, it overlooked the fact that spatial meaning is not exclusively expressed by prepositions. It excluded from the analysis a number of potentially important linguistic forms, among them those denoting geographic entities, place names, relational nouns, but also verbs and adverbs, which play an important role in the encoding of space in many languages (see Ameka and Levinson 2007).

The idea that geographic entities form a special subset of the lexicon is also found in the posthumously published writings of Whorf. Whorf noticed that words denoting places such as countries and cities often constitute a *cryptotype*, a class that may “easily escape notice and may be hard to define, and yet may have profound influence on linguistic behavior” (Whorf 1945:4, quoted in Mackenzie 2005). Mackenzie (2005) refers to this cryptotype as *place-denoting nouns*. He notes that, whether relational (e.g., right, lee) or not (e.g., Amsterdam), English place-denoting nouns can be substituted by *here/there* but not by *it* in spatial expressions. Nouns denoting first-order entities are readily substituted by *it* (or by *him/her* if the referent is a person).

(297)  
  a. I’ve come from Amsterdam, and Mike has come from there/*from it too.  
  b. I’m standing to the right of Mary, and John is standing there/* to it too.  
  c. I’m sitting in the lee of the wind, and Mary is sitting there/*in it too.  
  d. I’m wrapped up in the blanket, and John is wrapped up in it/?there too.

Mackenzie (2005:144)

However, the examples given by Mackenzie are not fully convincing. One problem is that in cases such as b) and c) in (297), it is the whole prepositional phrase that is substituted by *there*, not just the relational noun. The same holds for expressions with place names in the goal directionality: *I went [to Amsterdam]i/[there]*.

Cablitz’s (2008) study is in many ways a breakthrough in the analysis of the categorization of terms for geographic and subgeographic entities. Cablitz investigated landscape terms in North Marquesan and concluded that geographic terms are grammatically intermediate between first-order entities and place-denoting terms, or what she calls the *what*- and *where*-category, respectively, after Landau and Jackendoff (1993). Inspired by Cablitz’s work, I described the linguistic intricacies of the Lokono system showing that a similar *what/where* distinction operates there (Rybka 2014b). I also argued that the two categories bare striking
similarity to other types of noun categorization such as the mass/count distinction, and that its locus is specifically the directionality component of the spatial expression. The Lokono and North Marquesan data inspired Huber, who documented yet another reflex of the distinction in Makalero (Huber 2014; n.d.).

Each of these studies approached the what/where distinction from a largely emic perspective. For the analysis presented here linguistic comparability needs to be assured, therefore a clear definition of the what- and the where-category is necessary. Although I take over the what/where terminology used by Landau and Jackendoff (1993) and build upon the earlier findings of Cablitz (2008), I formulate a new definition of the what- and where-categories. This new definition is then applied to the three case studies: Marquesan, Lokono, and Makalero. I propose to go back to the question words what and where and the constructions they appear in. Though what and where interrogatives are not universally attested, cross-linguistically they are the two most common basic question words—that is, “unanalyzable words that represent the questioned element in a content question”, (Hengeveld et al. 2012:44). The what/where distinction can be operationalized by referring to the form of the directionality markers used with the two questions words. I thus define the what-category as nouns that combine with the directionality marker attested with the interrogative what, and the where-category as nouns that appear with the directionality marker attested with the interrogative where. Take the English goal directionality as an example. For the purpose of comparison with the answers in (299), I use the somewhat atypical non-inverted form of an English question.

(298) a. He went where?
    b. He went to what?

In English, where is classified as an interrogative adverb—it does not require any additional marking when used in the goal directionality. The question word what is nominal in nature and requires an additional preposition to in the goal directionality. It has to be kept in mind that the marking depends on the type of directionality—in the source directionality both interrogatives are treated identically: He came from what/where? In English most nouns pattern like what, with only a handful of terms behaving like where.

(299) a. He went home/upstairs/left/north/seaward/ashore/down/there.
    b. He went to Mary/to the table/to school/to Amsterdam.

English terms that behave like where, for instance, home, upstairs, right, north, seaward, are all categorized as adverbs rather than nouns. Nouns are normally found

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105 Other factors may play a role too. Notice that in everyday English one can also say: He went to where? This may be a sign that the already feeble distinction in English is disappearing. For some speakers the sentence He came from what? May sound odd, but this is more likely due to the choice of the verb and the Figure. A sentence It fell from what/where? is perfectly acceptable.
with the marker to that appears with the interrogative what. Consequently, in English one cannot say He went Amsterdam. The equivalent of this sentence is, however, a well-formed sentence in North Marquesan, Lokono, and Makalero. In the sense defined here, there is no where-category in English—there are no nouns that pattern like the interrogative where—unless one is willing to treat forms such as home, upstairs, or left as nouns. Such an analysis is definitely viable for, for instance, home. In any case, the where-category in English is limited.

Noun is the operative word here—the English example above show that terms from other word classes can also pattern like the interrogative where in the goal directionality. It is worth remembering the types of meanings encoded by such adverbials in English: certain structures (home), configuration (left, down), geographic terms (ashore), and deixis (there, here). These types of meanings recur in the discussion of the what/where distinction that follows. These are the types of meanings encoded by where-nouns in the languages under study. In English, however, terms encoding such concepts have lost their nominal character. The what/where distinction is clearly part of a larger phenomenon crosscutting the nominal and verbal domain. Nonetheless, I want to limit the term what- and where-categories to the grammaticalized distinction in the nominal domain in order to assure linguistic comparability. What counts as a noun, of course, is determined on language internal grounds.

Finally, the definition of the what/where distinction excludes non-spatial uses—the analysis is limited to the expressions that are a possible answer to a locative question. Fictive motion, sensory paths, temporal expressions, and the like are often attested uses of both the what- and where-marking as well (e.g., Langacker 1987; Talmy 1983). In North Marquesan, terms for buildings are normally what-marked. If instead the where-marking is used, an abstract institution is implied. In Lokono, the what-marking is used with verbs of perception and searching. Such uses are clearly part of the what/where phenomenon, but are excluded here since I want to focus in particular on the ontological features of physical entities. The following analysis therefore comes down to determining to which nouns the two types of marking extend when used in concrete spatial expressions.

8.3 Three case studies

In the following subsections, I discuss data from three unrelated languages that distinguish two nominal categories on the basis of differential directionality marking: the what-nouns and the where-nouns. The sample is a convenience sample. The distinction has only been documented thoroughly for these three languages only until now. Importantly, in the following the borderline cases are treated differently than in the previous sections, in which I was interested in the semantic shifts from one category to the other (§ 7.3.4). In this chapter the focus is on the ontological properties of the referents. The noun datra, for instance, is categorized once as a person-denoting noun ‘doctor’, and once as a place-denoting nouns ‘clinic’, rather than as an intermediate borderline cases. The borderline cases here include only nouns that can combine with both types of markers with no detectable change of meaning (e.g., Makalero place names). Such nouns, instead of illustrating the
underlying semantic pattern behind the *what/where* distinction, signal where the two categories overlap in a language.

8.3.1 Marquesan (Oceanic, French Polynesia)

North Marquesan (henceforth Marquesan) is an Austronesian language, spoken on 'Ua Pou island in the Marquesan archipelago (ISO 639-3: mrq). It is a fairly isolating, accusative case-marking language. Tense marking is not obligatory on the lexical head of the verbal phrase and subject noun phrases are often dropped. When used as locations or goals, nouns are marked by either of the two prepositions 'io or 'i, glossed as LOC.WHT and LOC.WHR, respectively. Both prepositions conflate the location and goal directionality, which is disambiguated by the predicate. A predicate encoding no change of location implies the location directionality, while a predicate encoding a change of location implies the goal directionality. Marquesan nouns are therefore divided into *what*-nouns and *where*-nouns based on the type of marker they receive when used as locations or goals (Cablitz 2008; 2006). The distinction is absent in the source directionality. There are also a number of landscape nouns that combine with both types of marking. The differential marking on such nouns in some cases entails systematic semantic changes. The combinatorial possibilities of the *what*- and *where*-markers with different types of nouns are summarized in Table 55 and illustrated with examples below.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td><em>what</em></td>
</tr>
<tr>
<td>personal pronouns</td>
<td><em>what</em></td>
</tr>
<tr>
<td>noun denoting animate beings</td>
<td><em>what</em></td>
</tr>
<tr>
<td>object-denoting nouns</td>
<td><em>what</em></td>
</tr>
<tr>
<td>part-denoting nouns (of objects)</td>
<td><em>what</em></td>
</tr>
<tr>
<td>part-denoting nouns (of landscape)</td>
<td>'?what'</td>
</tr>
<tr>
<td>structure-denoting noun (simplex nouns and event nouns)</td>
<td><em>what</em> or <em>where</em></td>
</tr>
<tr>
<td>landscape feature-denoting nouns (for small landscape features)</td>
<td><em>what</em> or <em>where</em></td>
</tr>
<tr>
<td>landscape feature-denoting nouns (for large landscape features)</td>
<td><em>what</em> or <em>where</em></td>
</tr>
<tr>
<td>proper place names</td>
<td><em>where</em></td>
</tr>
<tr>
<td>configurational nouns (incl. projective configurational nouns)</td>
<td><em>where</em></td>
</tr>
</tbody>
</table>

In (300) both, the *what*- and the *where*-marker are exemplified. In (300), there are two prepositional phrases. Both of them express the goal of movement, since the motion verb *heke* ‘go seaward’ is used.\(^\text{106}\)

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\(^{106}\) The glosses used in Marquesan and Makalero examples reflect the original sources, except for the glosses used for the *what*- and *where*-marking. Additional abbreviations used: ART—article; CONJ—conjunction; DEM—demonstrative; LNK—linker; NSIT—new situation; POSS—possessive; REDUCED—reduced form; REFL—reflexive; STV—state verbal particle; TAM—tense-aspect-mood particle; VOC—vocative.
Mea meita’i e hu’u tama e heke koe ‘i tai ‘io to hoa.

Mea meita’i e hu’u tama e heke koe
STV-P good VOC my child TAM go.seaward 2SG

‘i tai ‘io to hoa
LOC.WHR sea LOC.WHR your friend

‘It’s good, my dear child, you go down seaward to your friend.’ (Cablitz 2006:413)

In the first prepositional phrase, the goal is expressed by the noun tai ‘sea’, encoding a landscape feature, and the preposition ‘i is used. I call this marker the where-marker, since it appears with the interrogative hea/sea ‘where’. The where-marker is used with proper place names and many terms for large geographic entities (e.g., vao ‘bush, interior of island’ or moana ‘far out at sea’). The where-marker also appears with nouns encoding events. When combined with the where-marker, such nouns indicate the location, a building or a place, where the event typically takes place (e.g., kitchen). Other terms for structures and small spaces are, however, what-marked.

Finally, the where-marker appears with configurational nouns—that is, nouns expressing topological as well as frame-of-reference dependent spatial relations (e.g., ‘uka ‘up’, ‘a o ‘down’, ‘oto ‘inside’). Configurational nouns include also projective configurational nouns discussed below.

In the second prepositional phrase in (300), the goal is expressed by a person-denoting noun hoa ‘friend’, and the preposition ‘io is used. I call this marker the what-marker, since it appears with the interrogative aha ‘what’. The what-marker is used with proper names of people, generic person-denoting nouns, personal pronouns, and nouns denoting objects, and animals. It is also found with nouns denoting structures, excluding event nouns which encode locations when where-marked. Moreover, some terms for small landscape features are also used with the what-marker (e.g., papua ‘garden’, mata’ae ‘cape’, ava ‘passage’, opata ‘cliffs’, tahuna ‘gravel beach’). Finally, the category of what-nouns includes also relational nouns such as kaki ‘neck’ in (301).

Ua mau ‘io he kaki o te po’otu.

ua mau ‘io he kaki o te po’out
TAM attach LOC.WHR ART neck POSS ART beauty

‘(The garland) was attached on the neck of the beauty.’ (Cablitz 2006:315)

In (301) the Figure is in physical contact with the body part kaki ‘neck’. The what-marker appears with all relational nouns, provided that the Figure is in actual contact with the Ground—that is, when the noun denotes the actual part of the entity. Interestingly, the where-marker can appear with a small subset of such nouns as

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107 The category structures includes subgeographic scale places, such as buildings, rooms, and smaller spaces in all three languages under study. It is a somewhat residual category that is not defined very well. Typically members of this category are deverbal locatives and the term for home.
well. In such cases, however, the noun indicates a spatial region projected from the named part, not the part itself as in (302).

(302)  
\begin{verbatim}
Tap\textsuperscript{\textdegree}i te\textsuperscript{\textdegree}a koivi puaka i te kaokao o te tumu \textsuperscript{	extdegree}akau
\end{verbatim}

\begin{verbatim}
tapi'i te\textsuperscript{\textdegree}a koivi puaka
\end{verbatim}

\begin{verbatim}
'\begin{tabular}{ll}
LOC.WHR & ART \\
ART & side \\
ART & POSS \\
ART & trunk \\
\end{tabular}
\end{verbatim}

\begin{verbatim}
wood
\end{verbatim}

‘Stick that sow at the side of the tree.’ (Cablitz 2006:324)

In (302) the Figure does not have to be placed in physical contact with the body part, since the noun kaokao ‘side’ combined the where-marker implies a spatial region projected form it. This type of marking is only possible with a limited number of relational nouns, namely a’o ‘front’, tua ‘back’, keo ‘bottom’, and kaokao ‘side’. These nouns when where-marked function in fact as projective configurational nouns. In Table 55, such nouns appear therefore twice: when used with the what-marker, they are counted as relational nouns, but when used with the where-marker, they are counted as configurational nouns.

Finally, in the domain of landscape, some terms for both small and large landscape features combine with both markers without any detectable change in meaning (e.g., henua ‘land’). However, a few landscape nouns combine with both prepositions resulting in different semantics. This can be exemplified with the noun ka’ava in (303) and (304) below.

(303)  
\begin{verbatim}
Ena \textsuperscript{\textdegree}io he ka’ava.
\end{verbatim}

\begin{verbatim}
en\textsuperscript{\textdegree}a \textsuperscript{\textdegree}io he ka’ava
\end{verbatim}

\begin{verbatim}
\begin{tabular}{ll}
LOC.WHT & ART \\
\end{tabular}
\end{verbatim}

\begin{verbatim}
river
\end{verbatim}

‘He is by/at/in the river.’ (Cablitz 2008:216)

In (303) the prepositional phrase encodes the location of Figure, since the predicate does not encode motion. The what-marker combined with the noun ka’ava implies that the Ground is a river. However, when the same noun is combined with the where-marker, the meaning changes to ‘valley’, as in (304).

(304)  
\begin{verbatim}
Ena me te papa \textsuperscript{\textdegree}enana i te\textsuperscript{\textdegree}a ka’ava.
\end{verbatim}

\begin{verbatim}
en\textsuperscript{\textdegree}a me te papa \textsuperscript{\textdegree}enana i te\textsuperscript{\textdegree}a ka’ava
\end{verbatim}

\begin{verbatim}
\begin{tabular}{llll}
ART & pl.group & man \\
LOC.WHR & ART & =DEM \\
\end{tabular}
\end{verbatim}

\begin{verbatim}
valley
\end{verbatim}

‘There were a lot of people in that valley…’ (Cablitz 2006:416)

In (304) the prepositional phrase again encodes the location of the Figure. The use of the where-marker implies, however, that the Ground is the whole valley, not just

\footnote{In such cases, Cablitz still claims there may be a pattern: the what-marker is more felicitous when participants have actual physical contact with the geographical entity—that is, in the telic directionality (i.e. when the configuration is reached).}
the river. A similar example is the term motu, which means ‘island’ when followed by the where-marker, but ‘lava rock’ when followed by the what-marker. Cablitz (2008) concludes that a where-marked noun denotes a larger landscape feature, while a what-marked noun encodes a smaller one. Finally, in the sources there is no explicit mention of which directionality marker combines with terms for parts of landscape features, hence the question mark in Table 55. I assume therefore that they pattern like other part-denoting nouns—that is, with the what-marker—so that the Marquesan system can be juxtaposed with the Lokono one, for which the relevant data is available.

8.3.2 Lokono (Arawakan, Suriname)

As explained in previous sections, when used as locations and goals, Lokono nouns are marked by either the free form bithi or the bound form -n, glossed as LOC.WHT and LOC.WHR, respectively (Rybka 2014b). Both forms conflate the location and goal directionality, which is disambiguated by the verbal element of the clause, just like in Marquesan. A predicate encoding no change of location implies the location directionality, while a predicate encoding a change of location implies the goal directionality. Both markers have an atelic variant bithiro and –nro, respectively, derived with the atelic suffix –ro. Lokono distinguishes two types of nouns based on their location and goal directionality marking: what-nouns and where-nouns. The former include proper and generic terms for people, pronouns, terms for animals, plants, objects, and their parts. Where-nouns, on the other hand, include place names, configurational nouns, deverbal locatives, terms for structures, terms for geographic entities and their parts. The distinction is neutralized in the source directionality. The Lokono system, summarized in Table 56, was discussed in previous section and is therefore only briefly exemplified below.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>what</td>
</tr>
<tr>
<td>pronouns (incl. aba ‘something’)</td>
<td>what</td>
</tr>
<tr>
<td>noun denoting animate beings (incl. datra ‘doctor’)</td>
<td>what</td>
</tr>
<tr>
<td>object-denoting noun</td>
<td>what</td>
</tr>
<tr>
<td>part-denoting noun (of object)</td>
<td>what</td>
</tr>
<tr>
<td>part-denoting noun (of landscape)</td>
<td>where</td>
</tr>
<tr>
<td>structure-denoting noun (incl. locative nominalizations and datra ‘clinic’)</td>
<td>where</td>
</tr>
<tr>
<td>landscape-denoting noun (small features)</td>
<td>where</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>where</td>
</tr>
<tr>
<td>place name (incl. those formally related to object-denoting nouns)</td>
<td>where</td>
</tr>
<tr>
<td>configurational noun (incl. projective configurational nouns)</td>
<td>where</td>
</tr>
</tbody>
</table>

The what-marker bithi is exemplified in (305). I call this marker the what-marker, since it combines with the question word hama ‘what’. In the active clause shown in (305), the noun boyo ‘your mother’ encodes the goal of movement, and the atelic what-marker marker is used.
The *what*-marker combines with generic and proper terms referring to people, pronouns, terms for animals, objects, and their parts. The use of the *where*-marker *–n*, on the other hand, is exemplified below. In (306) the place name *Korhopa* encodes the goal of movement.

(305) *Bôsa boyo bithiro!*
\begin{verbatim}
 b–o:sa    b–oyo  biti–ro
2SG,–go    2SG,–mother LOC,WHT–ATL
‘Go toward your mother!’
\end{verbatim}

The *what*-marker combines with generic and proper terms referring to people, pronouns, terms for animals, objects, and their parts. The use of the *where*-marker *–n*, on the other hand, is exemplified below. In (306) the place name *Korhopa* encodes the goal of movement.

(306) *Bôsa Korhopanro!*
\begin{verbatim}
 b–o:sa  koropâ–n–ro
2SG,–go  Korhopa–LOC,WHR–ATL
‘Go to (toward) Korhopa!’
\end{verbatim}

I call this marker the *where*-marker, since it appears with the question word *halo* ‘where’. The *where*-marker extends to place names, configurational nouns, and terms for landscape features. To the list of *where*-nouns discussed in chapter 7, terms for parts of landscape features have to be added as well (e.g., *dako* ‘tributary’, *shirima* ‘headland’). The *where*-marker applies also to locative nominalization ending in *–nale* denoting places where the activity encoded in the root normally takes place, for instance, *kodanale* ‘part of the forest where palm leaves are collected and folded’, derived from the verb *kodon* ‘weave’. Some of the locative nominalizations denote small spaces or structures, for instance, *tikanale* ‘toilet’ (lit. defecation-place). Not surprisingly, the *where*-marker is also found on terms for buildings such as *bahu* ‘house’ or *banabo* ‘hut’.

Interestingly, the noun *datra* ‘doctor’ belongs in two different categories: when combined with the *what*-marker it denotes a person, but when combined with the *where*-marker it denotes a clinic (§ 7.3.4.1 above). The same applies to the indefinite pronoun *aba*, which refers to an animate being or an object when followed by the *what*-marker, but to a place when combined with the *where*-marker (§ 7.3.4.5). Similarly, nouns such as *ôlo* ‘tree species’, a *what*-noun, can also function as place names, in which case they are *where*-marked (§ 7.3.4.2). Finally, a few nouns function as relational nouns when *what*-marked, but as projective configurational nouns when combined with the *where*-marker, analogically to the subset of Marquesan relational/configurational nouns (§ 7.3.4.3 above). I also found examples of term for landscape features used with the *what*-marker (§ 7.3.4.4). The resulting meaning is that of a landform viewed from a distance or represented on a map as a symbol. The former turns out to be a case of a sensory path, excluded from this

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109 Interestingly, the telic form *bithi* is only compatible with person-denoting nouns, pronouns, and a few other terms. For all other nouns of this category only the atelic *bithiro* is acceptable. Telicity clearly plays a secondary role in the *what*/*where* distinction, but the discussion of this phenomenon is beyond the scope of this chapter. See also footnote 108 about the role of telicity in Marquesan.
comparative study. The latter does not denote to a landscape feature but an object—that is, a point, a line, or a polygon on a map.

8.3.3 Makalero (Papuan, East Timor)

Makalero is a fairly isolating Papuan language spoken in the Iliomar region, near the eastern tip of East Timor (ISO 639-3: mkz). It exhibits a strict AOV/SV word order, which plays a key role in determining grammatical relations (Huber 2011). Makalero differs from Marquesan and Lokono in the way nouns are categorized with respect to directional marking. Instead of having two fairly well-represented categories, Makalero uses the what-marking with all nouns, as summarized in Table 57. Only place names and terms for geographic entities additionally exhibit the where-marking. There are therefore no nouns that combine exclusively with the where-marking. Importantly, there is no specific information in the sources about nouns denoting parts of landscape features and nouns denoting small landscape features. The generalizations made by Huber suggest that they fall into the what-category as well. The Makalero directionality system is explained in detail below.110

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>what</td>
</tr>
<tr>
<td>pronouns</td>
<td>what</td>
</tr>
<tr>
<td>noun denoting animate beings</td>
<td>what</td>
</tr>
<tr>
<td>object-denoting noun</td>
<td>what</td>
</tr>
<tr>
<td>part-denoting noun (of objects)</td>
<td>what</td>
</tr>
<tr>
<td>part-denoting noun (of landscape)</td>
<td>what</td>
</tr>
<tr>
<td>structure-denoting noun</td>
<td>what</td>
</tr>
<tr>
<td>landscape-denoting noun (small features)</td>
<td>what or where</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>what or where</td>
</tr>
<tr>
<td>place name</td>
<td>what or where</td>
</tr>
</tbody>
</table>

Huber (2014; n.d.) explains that the location directionality in Makalero is expressed by a construction with a configurational verb. The Figure and the Ground are expressed by the subject and the object of the configurational verb, arranged in the AOV word order, as in (307).

(307) *Ani isikola isi*.  

\[
\text{ani} \quad \text{isikola} \quad \text{isi'}  
\]

\[
1SG \quad \text{school} \quad \text{be.at}  
\]

‘I am at school.’ (Huber n.d.:5)

110 The Makalero example is nevertheless important for the study. The Makalero type is probably the most common reflex of the what/where distinction cross-linguistically. Many cases that should be investigated in the future are listed in Stolz et al. (2014), who discuss locative zero-marking in a sample of languages.
In (307), the general verb *isi* ‘be at’ is employed. Alternatively, one of a number of specific configurational verbs can be used, for instance, *mutu* ‘be inside’ or *(k−)ua* ‘be on top’. The bare configurational verb, generic or specific but clearly static implies the location directionality. The goal directionality is derived from the location directionality by adding a motion verb to the utterance. There are two possible goal constructions. First, the motion verb can follow the Ground-denoting noun and the configurational verb, as in (308).

(308)  *Ei taure fani'=ini lopu mutu la'a?*

\[\begin{array}{llllll}
2Sg & \text{which:reduced} & \text{be.like} & \text{CONJ} & \text{house} & \text{be.inside:REduced} & \text{go}
\end{array}\]

‘How did you get into the house?’ (Huber n.d.:11)

In (308), the motion verb *la'a* ‘go’ follows the specific configurational verb *mutu* ‘be inside’. The configurational verb appears in its reduced form without the glottal stop, forming a single predicate with the motion verb. Alternatively, the motion verb can precede the Ground-denoting noun and the configurational verb, as in (309).

(309)  *Ani la'a=ni isikola isi'.*

\[\begin{array}{llllll}
1Sg & \text{go} & \text{CONJ} & \text{school} & \text{be.at}
\end{array}\]

‘I go to school.’ (Huber n.d.:7)

In (309), the motion verb *la'a* ‘go’ precedes the Ground-denoting noun and the general verb *isi*. The conjunction is optional and the configurational verb is used in its unreduced form. This suggests that in (309) there are in fact two distinct

\[\text{111 A comment with respect to the what-marking is necessary. Terms for animate beings and physical objects usually combine with specific configurational verbs, while terms for landscape features, institutions, buildings, relational concepts, containers, and body parts tend to}\]

\[\text{appear with the general verb *isi*. This distribution appears to be related to the ontological}\]

\[\text{features of the entities encoded by the nouns, and therefore is a phenomenon related to the}\]

\[\text{what/where distinction. This in fact led Huber (n.d.) to distinguish a third category of nouns—}\]

\[\text{nouns that tend to combine with *isi*; but not with the where-marking, namely buildings,}\]

\[\text{relational nouns, containers, and body parts. My analysis of the Makalero data is different. I}\]

\[\text{do not see a strong argument to distinguish noun categories solely on the basis of their}\]

\[\text{collocational possibilities with configurational verbs. Similarly, in English I do not make a}\]

\[\text{distinction between nouns combining with the general *at* and specific *in, on, or under*}\]

\[\text{Knowing that languages differ in the number of configurational terms, while in principle each}\]

\[\text{language has the same spectrum of spatial relations to express, it is clear that some}\]

\[\text{configurational terms are necessarily more general than others. I acknowledge the}\]

\[\text{collocational choices of Makalero nouns, but I do not think they are grammaticalized in the}\]

\[\text{same way as the what/where distinction is. Moreover, it should be noticed that the distinction}\]

\[\text{between the general verb and specific verbs is made at the level of configuration, while the}\]

\[\text{what/where distinction is encoded in at the level of directionality distinctions. The semantic}\]

\[\text{changes induced by the different configurational verbs, described in Huber (n.d.) reflect this}\]

\[\text{difference. They do not involve the modulation of the meaning of the noun, but the}\]

\[\text{modulation of the spatial relation.}\]
predicates ordered in a time-iconic manner (Huber n.d.). The above-described grammatical means of expressing the location and goal directionality apply to all nouns. I call it the what-marking, since it also appears with the interrogative pronoun sa’a ‘what’. This pattern does not, however, apply to the interrogative verb tau’ ‘where’.112

(310)  
Hai tau’? Hai ma’u=ni tau’?  
  hai tau’ hai ma’u=ni tau’  
  NSIT where NSIT come=LNK1 where  
‘Where is (he)? (He) came where?’

In (310) the verb tau’ appears twice and functions as the predicate on its own, first encoding the location and then the goal directionality when combined with a verb of motion. There are no nouns that pattern exclusively in this way. Nevertheless, two types of nouns stand out in the Makalero lexicon as being able to function both as goals and, less commonly, locations with the what-marking and optionally with the where-marking. These nouns include place names and terms for landscape features, for instance, larin ‘mountain’, meti ‘sea’, and ama ‘garden, field’. In (311) a proper place name is exemplified.

(311)  
[…] bisika’=ini hai Dili.  
  bis–ika’=ini hai dili  
  bus–up.in=LNK1 NSIT Dili  
‘[…] (he) took the bus and (then was at) Dili.’

In (311) the place name Dili, expressing the goal of motion, is not followed by a configurational verb. Rather, as Huber (2014) explains, it forms a predicate of its own, just like the interrogative verb tau’. An example with the location directionality is given in (312).

(312)  
[…] ki-rate hau ude Dirimuni.  
  ki–rate hau ude dirimuni  
  3:POSS–grave all be.up.there:REDUCED Dirimuni  
‘[…] their graves are all at Dirimuni up there.’

In both (312), the Ground-denoting noun is not followed by a configurational verb. Rather, it function as a predicate on its own, just like the interrogative verb tau’ in the location directionality.

112 The verb ma’u is glossed as ‘come’ by Huber (2011) but it clearly indicates goal directionality. The semantics of come and go verbs shows great cross-linguistic variation, and more attention should be paid to what ma’u really encodes—I suspect it is in fact non-deictic, but it acquires a particular deictic reading on the level of the utterance.
8.4 Discussion

It is beyond doubt that certain types of nouns are systematically what-marked, while other types of nouns tend to receive where-marking in the three languages under study. Interestingly too, though the modulations of meaning resulting from the application of both markers to a single noun are not focal to the discussion below, it is worth noting that there is a lot of overlap between the Marquesan and Lokono data (e.g., in both languages the what- and where-markers distinguish relational nouns from projective configurational nouns). Moreover, the types of meanings encoded by nouns combining with the where-marker overlap with the English adverbs that pattern like the interrogative where in English (e.g., certain structures such as home, configurational concepts such as left and down, geographic terms such as ashore). In all three languages, the what-marking (bithi, io’, configurational verbs) is formally more marked than the where-marking (–n, 1’, no configurational verb). The data from the three case studies are agglomerated in Table 58.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Example</th>
<th>Language code</th>
<th>arw.</th>
<th>mrq.</th>
<th>mkz.</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>Mary</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>pronouns</td>
<td>he</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>nouns denoting animate beings</td>
<td>mother</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>object-denoting noun</td>
<td>chair</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>part-denoting noun (of objects)</td>
<td>head</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>part-denoting noun (of landscape features)</td>
<td>headwaters</td>
<td>+</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>structure-denoting noun</td>
<td>house</td>
<td>+</td>
<td>+/-</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>landscape-denoting noun (small features)</td>
<td>garden</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>village</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>place name</td>
<td>Amsterdam</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>configurational noun</td>
<td>inside</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>#</td>
</tr>
</tbody>
</table>

Starting from the top of Table 58, nouns denoting animate entities and physical objects are what-marked in all three languages. If such a noun is where-marked, as is the case in Lokono, its denotation changes, rendering it a member of a noun type that is further below on the cline. This is, for instance, the case for the noun dairo ‘doctor’ or õlo ‘tree species’, which when where-marked denote a structure and a place, respectively. Similarly, a few nouns denoting parts function in both Lokono and Marquesan as configurational nouns when where-marked. In Table 58, just like in Table 55, Table 56, and Table 57 above, such nouns are therefore counted in the respective categories of what- and where-nouns depending on the marking—that is, as two different nouns, despite the obvious polysemy, since I am particularly interested in the referents of the nouns in the following sections.

Nouns denoting parts of objects are also what-marked in all three languages. Nouns denoting parts of landscape features, however, are where-marked in Lokono. There is no explicit information about such nouns for Marquesan and Makalero. I
assume therefore that they pattern like other part-denoting nouns, but this may not necessarily be the case. When more data is available, the place of the nouns denoting parts of landscape features on the cline may need to be revisited. Structure-denoting nouns are where-marked in Lokono. In Marquesan structure denoting nouns are what-marked, with the exception of event nouns encoding places associated with an activity. In Makalero, all such nouns are what-marked.

Nouns denoting smaller landscape features are where-marked in Lokono. In Marquesan such nouns combine with the what-marking, though some terms can also combine with the where-marking without any significant difference in meaning. For Makalero, there are no data for smaller landscape features—the examples given in by Huber (2014) include rather larger landscape features. Such data gaps are indicated in the tables above and should be investigated further, but for clarity of presentation I have not marked them in Table 58, where I assume that such nouns pattern like other landscape nouns. Terms for large landscape features are where-marked in Lokono. In Marquesan such nouns are on the whole where-marked, but a few of them can appear with both types of marking without a change in meaning.

In Marquesan and Lokono place names receive the where-marking. In Makalero, such nouns can optionally combine with the where-marking as well. In case this there is no semantic difference between a what- and where-marked noun. Finally, configurational nouns are where-marked in Lokono and in Marquesan. In Makalero the configurational concepts are expressed by verbs. The y do not count as nouns, but it is nevertheless interesting to notice that they pattern as where-nouns would; hence the asterisk symbol in Table 58.

Importantly, though a single cline can represent the distribution of the nouns in all three languages, the cut-off point between the two categories is language specific. In some languages the two categories may be of comparable size, as in Lokono and Marquesan. In other languages one category may cover most, if not all, of the nominal lexicon, as in Makalero. The borderline cases are predictably located on the cline between the what- and where-nouns, and can be classified into two types. Both types of marking can appear with the same noun, resulting in no change of meaning (e.g., Makalero place names) or in a modulation of the meaning (e.g., Marquesan noun ka’vai ‘river/valley’). Alternatively, the both types of marking may not be compatible with a single noun, but some nouns from a given noun type may combine with one marker while other with the other marker. This latter case implies of course that the arbitrarily delimited noun type in question (e.g., Marquesan landscape terms or structure terms) is in fact internally structured rather than a coherent category.

Importantly, since this preliminary study investigates the what/where marking only in three languages, it is not possible to arrive at a detailed hierarchy of nouns, representing the likelihood of a noun being categorized as a what- or a where-noun. Based on the attested patterns in the data, a preliminary hierarchy can be put forward, given in Table 59. The cline should be read as follows. If a noun type is where-marked in a language, then noun types lower than the relevant noun type can also be where-marked, and vice versa, if a noun type is what-marked in a language, then noun types higher than the relevant noun type can also be what-marked.
Ultimately, six noun types can be distinguished based on the what- and where-marking in the three languages. First, there are nouns that are typically what-marked, that is proper names of people, pronouns, noun denoting animate beings, object-denoting noun, and nouns denoting parts of objects. Second, nouns denoting parts of landscape features can be singled out. Third, there is the group of structure-denoting nouns, including terms for buildings, rooms, and other subgeographic-scale spaces. Fourth, there are terms for smaller and larger landscape features. Fifth, proper place names are distinguished. Last but not least, configurational nouns can be singled out as a final subcategory.

This comparative study and the resulting cline presented in Table 59 can be compared, for instance, with the work on the alienable/inalienable distinction by Nichols (1988). She demonstrates that there is a cross-linguistic hierarchy of nouns, representing their likelihood of being categorized as alienable and inalienable. Kinship terms and body part terms, for instance, are more likely to be encoded as inalienable than part-whole terms and spatial terms, which are in turn more likely than culturally basic items and the rest of the lexicon. Similarly to the distinction described here, the cut-off point between the two classes is language specific. Nichols’ (1988) study stirred an important discussion about the motivation behind the distribution. This question is equally important for the what/where distinction. In order to investigate the possible ontological basis for the what/where distinction, I apply the theory of ontological features developed by Mark and colleagues to the types of entities identified on the basis of the what and where-marking applied to the nouns encoding them (Mark 1993; Mark et al. 1999; Smith and Mark 2001; Smith and Mark 1999).

8.4.1 Ontological features of the referents

The pioneering work by Mark and colleagues was inspired by the extensive literature on the categorization of subgeographic entities, especially the few studies that in one way or another incorporated the geographic domain (e.g., Battig and

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**Table 59.** Hierarchy of nouns based on the what- and where-marking.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Language code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper names of people</td>
<td>arw.</td>
</tr>
<tr>
<td>Pronouns</td>
<td>-</td>
</tr>
<tr>
<td>Noun denoting animate beings</td>
<td>-</td>
</tr>
<tr>
<td>Object-denoting noun</td>
<td>-</td>
</tr>
<tr>
<td>Part-denoting noun (of objects)</td>
<td>-</td>
</tr>
<tr>
<td>Part-denoting noun (of landscape features)</td>
<td>+/+</td>
</tr>
<tr>
<td>Structure-denoting noun</td>
<td>+/+</td>
</tr>
<tr>
<td>Landscape-denoting noun (small features)</td>
<td>+/+</td>
</tr>
<tr>
<td>Landscape-denoting noun (large features)</td>
<td>+/+</td>
</tr>
<tr>
<td>Place name</td>
<td>+/+</td>
</tr>
<tr>
<td>Configurational noun</td>
<td>+/+</td>
</tr>
</tbody>
</table>


---
Montague 1968; Lloyd, Patton, and Cammack 1996; Tversky and Hemenway 1983). Smith and Mark (1999) formulated a number of theoretical assumptions about the ontological properties of geographic entities that render them distinct from entities on the subgeographic scale (Mark 1993; Mark et al. 1999; Smith and Mark 2001; 1999). This ontological polarity is argued to cause differences in the conceptualization of the two types of entities. Smith and Mark (1999) summarize their point in the following way:

> Geographic objects are not merely located in space, they are tied intrinsically to space in such a way that they inherit from space many of its structural (mereological, topological, geometrical) properties. For entities on the subgeographic scale, the ‘what’ and the ‘where’ are almost always independent. In the geographic world, by contrast, the ‘what’ and the ‘where’ seem to be much more closely intertwined.

Smith and Mark (1999:248)

Below, I provide a critical account of five key ontological properties discussed by Mark and colleagues, namely perceptual boundedness, size, location, type of boundary, and texture of boundary. The ontological properties of geographic entities proposed by Mark and colleagues allow us to contrast many geographic and subgeographic entities. The features of “ideal” subgeographic and geographic entities, according to Mark and colleagues, are given in Table 60. Below, I use these five ontological properties to describe the referents of the noun types forming the what/where cline represented in Table 58 above.

**Table 60. Features of ideal subgeographic and geographic entities.**

<table>
<thead>
<tr>
<th>Subgeographic entities</th>
<th>Geographic entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceptually bounded</td>
<td>Perceptually unbounded</td>
</tr>
<tr>
<td>Location as accidental predication</td>
<td>Location as categorial predication</td>
</tr>
<tr>
<td>Size as accidental predication</td>
<td>Size as categorial predication</td>
</tr>
<tr>
<td>Bona fide boundary</td>
<td>Fiat boundary</td>
</tr>
<tr>
<td>Crisp boundary</td>
<td>Fuzzy boundary</td>
</tr>
</tbody>
</table>

### 8.4.1.1 Perceptual boundedness

Entities on the subgeographic scale can normally be viewed within a single act of perception. Even though any entity is necessarily always perceived from a particular perspective, entities on the subgeographic scale differ from geographic entities in that their outline can be perceived in its totality in one act of perception. Moreover, if need be, they can often be physically manipulated to identify all their parts (i.e., we can rotate a chair). Geographic entities often lack this property. They are often too large and too distant for their outlines to be perceived in their totality from a single angle (e.g., mountain, forest). In some cases, there may be in fact no angle whatsoever from which their outlines can be perceived in their totality (e.g., ocean, sea). Neither can geographic objects be physically manipulated (at least not without
drastic measure being taken). The perception of their outline requires a succession of vistas integrated over time into a single image. I call this property *perceptual boundedness* after Cablitz (2008). The outline of a perceptually bounded entity can be perceived in its totality from a single angle. Geographic entities are argued to be perceptually less bounded than subgeographic entities.

However, certain entities that we would intuitively consider subgeographic entities are not particularly perceptually bounded (e.g., large buildings). *Vice versa*, certain small geographic entities—the referents of some landscape terms and place names—are in fact perceptually bounded (e.g., islets, ponds, rock outcrops, gardens, fields). Moreover, the perceptual boundedness of the referents of relational terms depends on the perceptual boundedness of the whole entity. A tree top is perceptually-bounded, but a mountain top may be perceptually unbounded. The same applies to spatial regions denoted by configurational nouns: they are perceptually bounded (e.g., Lokono *tafra diako* ‘table top’) and unbounded entities (e.g., *horhorho diako* ‘landform top’), and the difference is clearly related to the type of the entity, the configuration of which is indicated. In Table 61, the referents of the nouns from the *what/where* cline are graded with respect to perceptual boundedness.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Referent</th>
<th>Perceptually bounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>person</td>
<td>+</td>
</tr>
<tr>
<td>pronouns</td>
<td>person, animal, object</td>
<td>+</td>
</tr>
<tr>
<td>noun-denoting animate beings</td>
<td>animate being</td>
<td>+</td>
</tr>
<tr>
<td>object-denoting noun</td>
<td>object</td>
<td>+</td>
</tr>
<tr>
<td>part-denoting noun (of object)</td>
<td>part of object</td>
<td>+</td>
</tr>
<tr>
<td>part-denoting noun (of landscape)</td>
<td>part of landscape feature</td>
<td>+/-</td>
</tr>
<tr>
<td>structure-denoting noun</td>
<td>space, building</td>
<td>+/-</td>
</tr>
<tr>
<td>landscape-denoting noun (small features)</td>
<td>small landscape feature</td>
<td>+/-</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>large landscape feature</td>
<td>+/-</td>
</tr>
<tr>
<td>place name</td>
<td>place</td>
<td>+/-</td>
</tr>
<tr>
<td>configurational noun</td>
<td>spatial region</td>
<td>+/-</td>
</tr>
</tbody>
</table>

As a whole, perceptual boundedness decreases as we move from the referents of typical *what*-nouns to the referents of typical *where*-nouns. The cut-off point between perceptually bounded and unbounded entities falls between nouns denoting parts of objects, and nouns denoting parts of landscape feature, coinciding with the limits of the first type of entities recognized in the hierarchy in Table 59. Perceptual boundedness decreases as we move from the referents of typical *what*-nouns to the referents of typical *where*-nouns. The cut-off point between perceptually bounded and unbounded entities falls between nouns denoting parts of objects, and nouns denoting parts of landscape feature, coinciding with the limits of the first type of entities recognized in the hierarchy in Table 59. Perceptual boundedness decreases as we move from the referents of typical *what*-nouns to the referents of typical *where*-nouns. The cut-off point between perceptually bounded and unbounded entities falls between nouns denoting parts of objects, and nouns denoting parts of landscape feature, coinciding with the limits of the first type of entities recognized in the hierarchy in Table 59. Perceptual boundedness decreases as we move from the referents of typical *what*-nouns to the referents of typical *where*-nouns. The cut-off point between perceptually bounded and unbounded entities falls between nouns denoting parts of objects, and nouns denoting parts of landscape feature, coinciding with the limits of the first type of entities recognized in the hierarchy in Table 59.

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113 Cablitz (2008) does not provide a clear definition of *perceptual boundedness*. Mark and colleagues also limit themselves mostly to the “single act of perception” type of definition. Notice that in the literature a number of partly overlapping terms are in use (cf. Downs and Stea 1977; Montello 1993).
boundedness is therefore a possible ontological feature underlying the what/where cline. Of the three languages, it describes particularly well the distribution of nouns in the Lokono data set, in which the cut-off point falls between nouns denoting parts of objects and parts of landscape features.

8.4.1.2 Location as accidental/categorial predication

Second, perceptual boundedness often goes together with the capability of displacement. Therefore for entities of the subgeographic scale, location is not a defining feature. For such entities, location is a case of accidental predication in Mark et al.’s (1999) terms. The identity of such moveable entities as cat or chair does not depend on their location; a chair remains a chair irrespective of its location, orientation, or position. In the geographic domain, on the other hand, location may be a defining feature. A lagoon is an entity in contact with sea or ocean, not in contact with a lake—that is, a case of categorial predication. A cliff, at least in its non-technical use, is associated with the edge of the sea; an island is an elevation surrounded by water, not an elevation on land. Ideal geographic entities are thus immoveable and location can be their defining feature. However, the meanings of landscape features in the three languages do not seem to be sensitive to location. A good example is the Lokono term horhorho discussed above (chapter 4), which can refer to any type of landform irrespective of its location (i.e. including landforms surrounded by water). The precise semantics of landscape terms in the three languages should, however, be investigated on a case-by-case basis. In the absence of the evidence to the contrary, I assume that location is not a defining feature of landscape terms in the three languages. Location is, however, a central part of the meaning of place names—the proper names of landscape features. The knowledge of what Amsterdam is includes its (at least relative) location, as opposed to the concept city. This contrasts with entities such as Willem-Alexander and man; the change from proper to generic does not involve a change from location as categorial predication to location as accidental predication in the domain of nouns denoting animate beings and objects. Location in a relative, not absolute sense is also at least a secondary defining feature for part terms in most languages. Body parts come with a predefined holistic distribution within an organism. Finally, location is the defining feature of spatial regions—the referents of configurational nouns. In Table

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114 This should not be confused with the fact that the same artifact can be categorized differently because of its function. Whether an entity is categorized as a pot or a bowl may depend on whether it is in the garden with a plant in it or in the kitchen containing fruit. However, a bowl with fruit in a garden is still a bowl.

115 This is not the case in all languages. In Zapotec, for instance, the vertical dimension determines the naming of the parts. If an object is turned upside down its bottom is reanalyzed as its top (MacLaury 1989; quoted in Levinson 2003).

116 Moreover, sandbanks and cays (low banks of reef or coral) can move and grow. It is, however, unclear to me whether a sandbank that has moved is considered the same sandbank—a shadow of doubt that goes back to Heraclitus’ idea of Pantha rhei ‘everything flows’ (Peters 1967). If so, such cases have to be considered intermediate with respect to the property location.
62, the referents of the nouns from the *what/where* cline are graded with respect to location as accidental predication.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Referent</th>
<th>Location as accidental predication</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>person</td>
<td>+</td>
</tr>
<tr>
<td>pronouns</td>
<td>person, animal, object</td>
<td>+</td>
</tr>
<tr>
<td>nouns denoting beings</td>
<td>animate being</td>
<td>+</td>
</tr>
<tr>
<td>object-denoting nouns</td>
<td>object</td>
<td>+</td>
</tr>
<tr>
<td>part-denoting nouns (of object)</td>
<td>part of object</td>
<td>–</td>
</tr>
<tr>
<td>part-denoting nouns (of landscape)</td>
<td>part of landscape feature</td>
<td>–</td>
</tr>
<tr>
<td>structure-denoting noun</td>
<td>space, building</td>
<td>+</td>
</tr>
<tr>
<td>landscape-denoting nouns (small features)</td>
<td>small landscape feature</td>
<td>+</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>large landscape feature</td>
<td>+</td>
</tr>
<tr>
<td>place name</td>
<td>place</td>
<td>–</td>
</tr>
<tr>
<td>configurational noun</td>
<td>spatial region</td>
<td>–</td>
</tr>
</tbody>
</table>

Location as accidental predication fails to account for the observed grammatical pattern as a whole. Part-denoting nouns, for which location is at least a secondary defining feature, are more likely to be encoded by *what*-nouns than terms for structures, for which location is clearly not a defining feature. However, it is worth noting that terms for which location is clearly a defining feature (i.e. place names and configurational nouns) are typically *where*-marked. The parameter may also account for the specific shifts between the two categories—namely, the case of nouns that function as relational nouns when *what*-marked, and as configurational nouns when *where*-marked (e.g., Lokono shibo ‘face, in front’). Relational nouns—that is, part denoting nouns—share with configurational nouns the property of being defined by their (relative) location. It is likely this property of relational nouns that predisposes them to functioning as configurational nouns in the intrinsic frame of reference. Such patterns are cross-linguistically very common (e.g., Heine, Claudi, and Hünnemeyer 1991).

8.4.1.3 Size as accidental/categorial predication

Analogically, size is an accidental predication for subgeographic entities. The size of a cat changes throughout its life, which does not affect its identity as a cat. Hence, subgeographic entities may change location and size. “Ideal” geographic entities, on the other hand, do not grow, at least normally not at a speed observable to the human eye. Therefore, size can function as their defining feature or, in Mark et al.’s (1999) words, as categorial predication.\(^{117}\) Compare the following pairs in English: bay-

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\(^{117}\) Mark (p.c.) has since changed his opinion on the significance of location in the domain of geographic entities, and believes that it only rarely becomes a categorial predication for
cove, sea-ocean, hill-mountain, creek-river, hamlet-village in which size is crucial to the definition of the terms. However, size can function at least as a secondary defining feature for subgeographic entities as well. Entities such as *pony* ‘a horse of a small breed’ are an example thereof (Stevenson 2010). Moreover, diminutive and augmentative terms for subgeographic entities are regularly found in languages, for instance, Dutch terms such as *tafeltje* ‘little table’ and *tafel* ‘table’. In Table 63, the referents of the nouns from the *what/where* cline are graded with respect to size as accidental predication.

**Table 63.**

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Referent</th>
<th>Size as accidental predication</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>person</td>
<td>+</td>
</tr>
<tr>
<td>pronouns</td>
<td>person, animal, object</td>
<td>+</td>
</tr>
<tr>
<td>animate-denoting noun</td>
<td>animate being</td>
<td>+</td>
</tr>
<tr>
<td>object-denoting noun</td>
<td>object</td>
<td>+</td>
</tr>
<tr>
<td>part-denoting noun (of object)</td>
<td>part of object</td>
<td>+</td>
</tr>
<tr>
<td>part-denoting noun (of landscape)</td>
<td>part of landscape feature</td>
<td>+</td>
</tr>
<tr>
<td>structure-denoting noun</td>
<td>structure</td>
<td>+</td>
</tr>
<tr>
<td>landscape-denoting noun (small features)</td>
<td>small landscape feature</td>
<td>+/−</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>large landscape feature</td>
<td>+/−</td>
</tr>
<tr>
<td>place name</td>
<td>place</td>
<td>+</td>
</tr>
<tr>
<td>configurational noun</td>
<td>spatial region</td>
<td>+</td>
</tr>
</tbody>
</table>

Size as an accidental predication does not account for the observed grammatical pattern as a whole. Nevertheless, it is worth noting that Cablitz (2008) argued that in Marquesan terms for geographic entities that are smaller are *what*-marked (e.g., *papua* ‘garden’, *mata’ae* ‘cape’, *ava* ‘passage’, *opata* ‘cliffs’, *tahuna* ‘gravel beach’). Terms for larger geographic entities are *where*-marked (e.g., *vao* ‘bush, interior of island’ or *moana* ‘far out at sea’). Although size accounts for only a small subset of the Marquesan data, it still may be of some importance to future research. Size as an accidental or categorial predication may be an important property for geographic entities only. However, different languages can encode it in different ways. Languages such as English have mostly lexicalized the differences between geographic entities of different sizes (e.g., *creek*–*river* and *hill*–*mountain*). Similarly in Lokono size is directly or indirectly encoded by certain pairs of terms such as: *oni* ‘river’ and *onikhon* ‘creek’ (moving water features), *barká* ‘sea’ and *kiraha* ‘pond’ (water bodies), *thoyoshikwa* ‘city’ and *shikwahu* ‘village’, *bunaha* ‘permanent path (large)’, *sorhi* ‘temporary path (small)’, as well as by the opposition between *konoko* ‘forest’ and *karhow* ‘savanna’, on the one hand, and the *wkili*- and *wkaro*-terms for natural geographic objects such as *lagoon* or *beach*, but for *fiat* objects (see below) location is part of the definition—that is, *France* is defined by its boundaries.
ecotopic patches, on the other hand. Languages such as Marquesan, on the other hand, may use the *what/where* distinction to bring out the same semantic differences (e.g., *motu* _LAVA_–*motu* _ISLAND_ and *ka’au* _RIVER_–*ka’au* _VALLEY_). Size is therefore not a property that distinguishes what-entities from where-entities per se, but a property that may play a role the domain of landscape terms.

8.4.1.4 Type of boundary

Another important difference between geographic and subgeographic entities is the type of boundary that delimits their extent. Entities on the subgeographic scale have *bona fide* boundaries—that is, boundaries that correspond to “genuine discontinuities in the world” (Smith and Varzi 2000; Smith 2001). It is a fact of life, for instance, that the table finishes where the floor starts. On the other hand, many geographic entities are demarcated by *fiat* boundaries—that is, boundaries that are imposed solely by human cognitive processes, including customs and law in the case of settlements and countries. Mountains are clearly delimited by their summits and ridges but their lower parts do not have a clear edge. It is a matter of human cognition to impose the boundary between the mountain and the rest of the landmass. Fiat boundaries exist also on the subgeographic scale, for instance, in the domain of animal and human body parts. The dividing lines between different body parts are for the most part not *bona fide* boundaries. There is no *bona fide* dividing line between arm and shoulder, but our cognition does impose one. The key role that cognition plays here is reflected in the fact that cross-linguistically the body is partitioned into language-specific body part systems (Majid, Enfield, and van Staden 2006). Cultural practices can be of importance too—think of the precision with which Koreans distinguish almost 120 different cuts of beef. Furthermore, some human made geographic entities (e.g., fields, gardens), water bodies (e.g., lakes, ponds, rivers) and landforms bordering on such bodies (e.g., islands) can be thought of as having *bona fide* boundaries (at least at a given moment in time corresponding to a given water height in the case of hydrological entities). Spatial regions may have both *fiat* boundaries of the fuzzy type (e.g., the end of *tafra diako* ‘table top’ and the beginning of *tafra rhebo* ‘table edge’). In Table 64, the referents of the nouns from the *what/where* cline are graded with respect to type of boundary.
It can be observed that entities with *bona fide* boundaries are encoded by typical *what*-nouns (person-, animal-, and object-denoting nouns). *What*-nouns, however, typically also include relational terms denoting parts of entities; such parts typically have *fict* boundaries as well. The parameter also fails to account for terms for structures, which typically also have *bona fide* boundaries, but are more commonly encoded by *what*-nouns than part terms. The type of boundary therefore does not account neatly for the observed grammatical pattern.

### 8.4.1.5 Texture of boundary

Boundaries of geographic entities can be *fuzzy* as opposed to usually *crisp* boundaries of entities on the subgeographic scale, such as objects. Swamps and vegetation patches, for instance, do not have crisp boundaries; they tend to blend into one another, often creating transition areas, which in turn can be recognized as separate entities (see also the notion of ecotone in Johnson and Hunn 2012b). In the domain of subgeographic entities, such transition zones are rare. Structures typically also do not have fuzzy boundaries. In Table 65, the referents of the nouns from the *what*/*where* cline are graded with respect to texture of boundary.

<table>
<thead>
<tr>
<th>Noun type</th>
<th>Referent</th>
<th>Bona fide boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper names of people</td>
<td>person</td>
<td>+</td>
</tr>
<tr>
<td>pronouns</td>
<td>person, animal, object</td>
<td>+</td>
</tr>
<tr>
<td>animate-denoting noun</td>
<td>animate being</td>
<td>+</td>
</tr>
<tr>
<td>object-denoting noun</td>
<td>object</td>
<td>+</td>
</tr>
<tr>
<td>part-denoting noun (of object)</td>
<td>part of object</td>
<td>+/-</td>
</tr>
<tr>
<td>part-denoting noun (of landscape)</td>
<td>part of landscape feature</td>
<td>+/-</td>
</tr>
<tr>
<td>structure-denoting noun</td>
<td>room, space, building</td>
<td>+</td>
</tr>
<tr>
<td>landscape-denoting noun (small features)</td>
<td>small landscape feature</td>
<td>+/-</td>
</tr>
<tr>
<td>landscape-denoting noun (large features)</td>
<td>large landscape feature</td>
<td>+/-</td>
</tr>
<tr>
<td>place name</td>
<td>place</td>
<td>+/-</td>
</tr>
<tr>
<td>configurational noun</td>
<td>spatial region</td>
<td>+/-</td>
</tr>
</tbody>
</table>

In Table 65, the referents of the nouns from the *what*/*where* cline are graded with respect to texture of boundary.

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**Table 64. Type of boundary.**
In general, it can be observed that entities with crisp boundaries are encoded by **what**-nouns (person-, animal-, and object-denoting nouns), while entities with fuzzy or partially fuzzy boundaries are encoded by **where**-nouns (i.e. place- and landscape-denoting nouns). As a whole, crisp boundaries become less typical as we move from the referents of **what**-nouns to the referents of **where**-nouns. Texture of boundary therefore is a possible ontological feature underlying the **what**/**where** cline. More specifically, it may account for the specific cut-off point in Makalero, where landscape terms and place names are the only nouns that combine with the **where**-marking.

### 8.5 Conclusions

In this chapter, I have investigated the **what**/**where** distinction from a comparative perspective. Despite the small sample size, parallelisms between the three languages are conspicuous. The distinction manifests itself in the location and goal directionality, but not in the source directionality. All three languages conflate the two directionalties, therefore it is impossible to tease apart which of the two is more sensitive to the distinction. A larger sample may shed light on this question. Interestingly too, formally **what**-nouns are always less marked than **where**-nouns when functioning as Grounds in spatial descriptions. This comparative evidence supports the idea discussed in chapter 7 the **what**- and **where**-marking may be a grammaticalized reflection of the Figure/Ground disparity. Most importantly, the distribution of nouns between the two categories, the **what**-nouns and the **where**-nouns, is far from accidental. By comparing the three cases, I have arrived at a preliminary cline of nouns, illustrating the likelihood of a noun being classified as a **what**- or **where**-noun. Six different types of nouns can be distinguished on the cline, based on the observed splits in the three languages, forming a preliminary implicational hierarchy. As expected, since languages have only two categories at
their disposal, the cut-off point between them is language specific; in each of the cases, the what- and where-category boast a different membership.

In this chapter I looked specifically at the possible dimensions underlying the observed distribution of nouns along the cline. Since where-nouns typically include terms for geographic entities (i.e. generic landscape terms and proper place names), I have scrutinized the ontological properties of noun types identified on the cline through the prism of the theory of ontological properties of subgeographic and geographic entities. By comparing the distribution of the ontological properties of the referents with the distribution of the terms encoding them, I investigated which ontological properties of entities may be relevant to the what/where distinction. In other words, which ontological properties of entities may be grammaticalized by the what/where type of noun categorization. None of the parameters accounts perfectly for the observed distribution in the three languages; which is not a surprising fact considering that each parameter was treated here as a binary feature (and there are three languages, each with a different distribution of nouns). Type of boundary turned out to be particularly misaligned with the what/where distinction in the three languages. Perceptual boundedness and texture of boundary, however, appear to be the only two parameters that change monotonically as one moves from the referents of what-nouns to those of where-nouns. Moreover, the former property can account fairly well for the Lokono type of split, while the latter for the Makalero system. Location as accidental or categorial predication, however, provides us with an interesting motivation for the observed shifts between the categories. The inherent semantic component of location may predispose a subset of nouns in Lokono and Makalero to function as relational nouns when what-marked, but as configurational nouns when where-marked. Size, on the other hand, turned out to be of relevance only to a subset of landscape nouns in Marquesan, a finding that nevertheless may be of importance to the study of the encoding of landscape. Some languages may encode the size of landscape features in the lexicon (e.g., English), while other languages may resolve to encoding it on the level of grammar—that is, by using the what/where distinction (e.g., Makalero).

Interestingly, such encoding of the size of geographic entities is only possible in the directional expressions, which raises the question what is the special relation that landscape terms have with the spatial expressions in general. In chapter 7, I hypothesized that this may be a reflection of their proclivity to function as Grounds in spatial descriptions. Abstracting from the Marquesan case, in practical terms the proclivity of landscape terms to appear as Grounds in spatial expressions may have far reaching consequences for language documentation. In Lokono, for instance, many geographic terms contain configurational nouns (e.g., horhorho diako ‘landform’s top’). Such nouns are only used as objects of the verb in highly marked contexts. More naturally, such expressions are used with directionality markers, encoding the location, goal, or source. This implies that when trying to elicit Lokono geographic terms it is important to ask the right question. Phrases such as horhorho diako ‘top of landform’ are a felicitous answer only to the question Halonka no? ‘Where is it?’ but not to the question Hama to? ‘What is it?’ This should be taken into consideration when documenting landscape terms in other languages.

Related to this technical problem is the more theoretical question of what type of semantics is encoded by landscape terms and place names in different languages.
Assuming that across cultures, there is little variation in the ontological features of geographic entities, it is interesting to observe that languages treat landscape terms differently grammatically. In English one cannot say *I go Amsterdam but in Makalero, Lokono, and Marquesan this is a well-formed sentence—that is, Lokono, Makalero, and Marquesan place names can all be used as goal and locations with the same marking that appear with the interrogative where. The Makalero example Bisika’ini hai Dili translates in fact literally as ‘(he) took the bus and Dili.’ This raises the question whether the English and Makalero place names encode in fact slightly different concepts; Makalero place names appear to be inherently more “locative”. Locative is, of course, a place holder for the ontological features relevant to the what/where distinction in Makalero. This theoretical question applies of course not only to landscape terms and place names, but to all translational equivalents that are categorized differently in the languages in question. Similar debate surrounds the mass/count dichotomy and related phenomena, but the what/where distinction is not as well documented and analyzed.
9. Conclusions

As a way of closing up the discussion of Lokono landscape terms, I return to the central question asked at the onset of the thesis: Which of the three factors—nature, culture, and system—determine the linguistic encoding of landscape? By nature, I understand the physical features of the environment—that is, their ontological properties (e.g., size). Culture refers here specifically to the cultural practices related to landscape features (e.g., subsistence practices and the system of animistic beliefs). Finally, system stands for the general architecture of the language in question (e.g., morphosyntactic features of the language). The question of the role general human cognitive constraints play in the linguistic encoding of landscape is not addressed in this thesis, which focuses on language structure only—one specific type of a human cognitive system. In the following, I bring together the findings from the preceding chapters and group them into four different topics, each of which is discussed through the prism of the three factors. First, I discuss non-relational landscape terms with respect to three types of noun categorization: gender, possession, and countability (§ 9.1). Second, I sum up the findings about the semantic structure of the landscape domain. (§ 9.2). Third, I look at complex landscape terms with relational and configurational nouns demonstrating similarities and differences between such expressions and complex expressions in other semantic domains (§ 9.3). Finally, I sum up the findings about the relation between the grammar of space and the domain of landscape terms (§ 9.4).

9.1 Gender, possession, and countability

Generic landscape terms, as nouns denoting inanimate entities, are feminine set nouns, and pattern accordingly with gender-marked forms in the language and quantifying expressions. On the syntactic level, the nominal features of gender and countability of landscape nouns are therefore in keeping with the general architecture of the language. The morphological gender markers in the domain of ecotopes in turn encode the physical features of the ecotope—namely, water saturation. As argued in chapter 5, such physical features are in turn inextricably linked to cultural practices—a fact reflected also in the use of culturally salient plants as roots for the ecotopes and the consistent correlation of a number of species with dry and wet ecotopes, respectively. The use of the gender markers specifically to express this contrast may in turn be motivated by the Lokono animistic system of beliefs. The two types of ecotopic terms may have been entangled in the Lokono system of beliefs, functioning as subtle beacons of warning against malevolent spiritual beings. In other words, the general architecture of the language may have been employed here to encode culturally specific information about landscape features and their spiritual inhabitants. In chapter 3, I have also shown that such spiritual beings as the oriyo are permanently located in certain types of landscape features. When discussing the habitats of such spirits, the Locative Equation is used instead of the Basic Locative Construction. This choice is motivated by the fact that
the spatial relation between the spirit’s habitat and the landscape feature is considered permanent.

Generic landscape terms can be divided into non-relational nouns, on the one hand, and relational and configurational nouns, on the other. Morphologically complex non-relational landscape terms are derived by means of processes attested in other semantic domains such as the addition of the gender marker –ro to stative verbs or the addition of an unpossessed suffix to inalienable nouns, further illustrating the importance of the language system as a whole. Language structure is also reflected in the possessive paradigms of relational and configurational landscape terms (§ 9.3). In these two cases, the obligatory possessor encodes the landscape feature, the part or configuration of which is named. The inalienable paradigm of such nouns is merely a reflex of the language system, which renders all relational and configurational nouns inalienable. On the other hand, when the possession paradigms of non-relational nouns are scrutinized, the role of culture becomes conspicuous (Table 66).

**Table 66. Possession paradigms of non-relational landscape terms.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Term</th>
<th>Meaning</th>
<th>Possession paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human-made features</td>
<td>thoyoshikwa</td>
<td>city</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>shikwahu</td>
<td>village</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>waboroko</td>
<td>road</td>
<td>alienable/inalienable</td>
</tr>
<tr>
<td></td>
<td>kabuya</td>
<td>field</td>
<td>suppletive</td>
</tr>
<tr>
<td></td>
<td>kabura</td>
<td>fishery</td>
<td>inalienable</td>
</tr>
<tr>
<td></td>
<td>banabo</td>
<td>outfield camp</td>
<td>inalienable</td>
</tr>
<tr>
<td></td>
<td>sorhi</td>
<td>temporary path</td>
<td>inalienable</td>
</tr>
<tr>
<td></td>
<td>bunaha</td>
<td>permanent path</td>
<td>inalienable</td>
</tr>
<tr>
<td></td>
<td>kori</td>
<td>bathing place</td>
<td>inalienable</td>
</tr>
<tr>
<td>Water features</td>
<td>barhâ</td>
<td>sea</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>kiraha</td>
<td>pond</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>oni</td>
<td>river</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>onikhan</td>
<td>creek</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>onêbera</td>
<td>swamp</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>omadâro</td>
<td>rapids</td>
<td>unpossessable</td>
</tr>
<tr>
<td>Vegetation features</td>
<td>karhow</td>
<td>savanna</td>
<td>irregular</td>
</tr>
<tr>
<td></td>
<td>konoko</td>
<td>forest</td>
<td>irregular</td>
</tr>
<tr>
<td></td>
<td>X-wkili</td>
<td>dry patch</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>Y-wkaro</td>
<td>wet patch</td>
<td>unpossessable</td>
</tr>
<tr>
<td></td>
<td>kairi</td>
<td>clearing</td>
<td>unpossessable</td>
</tr>
<tr>
<td>Landforms</td>
<td>horhorho</td>
<td>landform</td>
<td>irregular</td>
</tr>
</tbody>
</table>

Non-relational landscape terms, whether internally complex or not, include alienable, inalienable, and unpossessable nouns. All three types are also attested in other semantic domains. However, the paucity of alienable nouns and the correlation between the possession paradigm and the cultural practices related to specific landscape features are striking.

Non-relational inalienable landscape terms name human-made landscape features (*banabo* ‘outfield camp’, *sorhi* ‘temporary path’, *bunaha* ‘permanent path’, *kori* ‘temporary path’, *bunaha* ‘permanent path’,...
and kori ‘bathing place’). In this case, the obligatory possessor encodes the owner or the creator of the landscape feature (e.g., da–sorhi ‘my temporary path’). The possession pattern reflects therefore Lokono cultural practices. The referents of such nouns are typically considered to be the property of individuals or families. Permanent paths lead typically to the fields of the family; temporary camps are set up by families near their fields. Bathing places are considered private, and passing through the bathing places of others is avoided. Temporary paths are created merely for the purpose of a single individual that sets out into the forest, and disappear within days. The noun waboroko ‘road’ presents an interesting counterexample to the generalization that there are no regular alienable nouns in the Lokono landscape vocabulary. The fact that roads are a recent addition to the local landscape and that they have not been created by the Lokono may explain this exceptional case. The ownership of landscape features such as roads may be culturally indeterminate. Linguistically, this is reflected in the fact that the speakers are inconsistent in the use of the possessive suffix with waboroko, treating it sometimes as alienable, and sometimes as inalienable.

In the group of inalienable nouns, the possessor of which encodes the owner or creator of the landscape feature, I also include the noun kabura ‘fishery’. At first glance, the possessor of kabura encodes the most likely catch. It is not unlikely, however, that the possessor in this case refers in fact to the spiritual manifestation of the relevant species associated with the place. In the animistic beliefs of the Lokono, each living being has its own spirit, which protects the species and is responsible for its reproductive activity (e.g., Roth 1915; de Goeje 1942). The obligatory possessor of the noun kabura may have in fact referred to the spirit of the particular fish associated with the place. This idea is similar to the better described concept of master of animals of the Tukano people (Reichel-Dolmatoff 1987). Such masters of animals—the spiritual protectors of a landscape feature—are in charge of certain places making sure the animals are under required protection, so that their reproductive activities are not disrupted. Importantly too, kabura has a secondary meaning ‘village territory’. When signifying the territory of a village, the possessor of kabura encodes the owner—the inhabitants of the village.

Unpossessable nouns are nouns that do not normally appear with a possessor. The possessed forms of such nouns are on the whole rejected by the speakers. I do not commit myself, however, to the statement that they cannot be possessed at all. Given the right circumstances, for instance in the context of verbal art, all nouns can probably be possessed. Nevertheless, terms for water features (barhā ‘sea’, kiraha ‘pond’, oni ‘river’, onikhan ‘creek’, onēbera ‘swamp’, and onadāro ‘rapids’), settlement types (thoyoshikwa ‘city’, shikwahu ‘village’), ecotopic patches (the wkili- and wkaro-derivations), and the noun kairi ‘negative vegetation space’ have not been attested as the possessed element in possessive phrases. This can be attributed to the fact that the landscape features they encode are not considered the property of any individuals or groups.

The possessive paradigm is particularly complex in the case of the noun shikwa ‘house/village’. When possessed, shikwa signifies ‘home’, the suppletive non-possessed form of which is bahu. When unpossessed (i.e. with the suffix –hV), however, shikwahu means ‘village’, a form that does not have a possessed equivalent. When talking about someone’s village, the speakers have at their
disposal the term *shikwa* ‘home’, the denotation of which is narrower, or the term *kabura* ‘village territory’, the denotation of which is larger. It is not unlikely that the lack of a possessed form for the concept village is a reflection of past cultural practices. The Lokono society is organized into matrilineal family groups. Spatially the family groups are organized into matrilocal complexes, located at quite a distance from each other within the village space. These distances might have been even larger in the past, since the centralization of the villages is the result of missionary activities. The utility of the possessable nouns *shikwa* ‘home’ and *kabura* ‘village territory’ is therefore evident. The derived nature of the term for village and its incomplete possessive paradigm may in turn be attributable to the fact that villages are a form of social organization that was not native to Lokono culture.

Finally, there are four possessable landscape terms with irregular possessive suffixes or suppletive forms—namely, *konoko* ‘forest’, *karhow* ‘savanna’, *horhorho* ‘landform’, and *kabuya* ‘field’. The noun *horhorho* (apart from its use as a general landscape term) and *kabuya* refer to fields, which are the property of individuals or families. The remaining two are not normally considered property of anyone within the community. Importantly, however, these two nouns are entangled in the political discourses concerning land ownership and land rights, which can explain why they are grammatically possessable and alienable. Cultural practices and the architecture of the language can on the whole account fairly well for the possessive paradigms of generic landscape terms.

### 9.2 Semantic template

Leaving aside the nominal categories of gender, countability, and possession, it is interesting to sum up how the domain of landscape is subdivided at the level of the lexicon. In the subdomain of landforms, there is only one non-relational term—namely *horhorho* ‘landform’. The other three subdomains of landscape terms are more lexically diverse. There are 12 terms for vegetation assemblages (including the specific ecotope terms), 9 terms for human-made landscape features, and 6 terms for water features. Such differences may reflect the relative salience of the subdomains to the Lokono. In chapter 4, it has been observed that the Lokono landscape does not show much variation in terms of the lay of the land. Neither do landforms have a particular significance to the Lokono cultural practices. In fact, certain landforms, such as rock outcrops and mountains, as places believed to harbor powerful spirits, are associated with cultural taboos and restrictions. The paucity of landform terms may be a lexical reflex of the low salience of landforms in Lokono culture and the low geomorphological diversity of the area. Nevertheless, the scarcity of non-relational terms for landforms is compensated by the set of complex expressions with relational and configurational nouns (§ 9.3). Terms from the other three domains can also combine with relational and configurational nouns into complex landscape terms, but at the level of the lexicon the three remaining subdomains encode more distinctions.

Starting with the Lokono terms for water features, given in Table 67, let us notice that the vocabulary is organized by three oppositions: large–small, permanent–temporary, and place–path.
TABLE 67.
SEMANTIC OPPOSITIONS IN THE SUBDOMAIN OF WATER FEATURES.

<table>
<thead>
<tr>
<th>path</th>
<th>place</th>
</tr>
</thead>
<tbody>
<tr>
<td>permanent</td>
<td>temporary</td>
</tr>
<tr>
<td>large</td>
<td>oni</td>
</tr>
<tr>
<td>small</td>
<td>onikhan</td>
</tr>
<tr>
<td>*lakabwa</td>
<td>onêbera</td>
</tr>
</tbody>
</table>

The size of the referent distinguishes the nouns oni ‘river’ and onikhan ‘creek’, as well as barhā ‘sea’ and kiraha ‘pond’. In the first case the difference is expressed by the addition of the diminutive marker, in the latter case it is encoded at the level of the roots. The two pairs differ from each other, on the other hand, in that the former pair encodes paths, while the latter pair encodes places. Creeks and rivers used to function as a transportation network; for the Lokono they are the de facto equivalents of roads and paths on land. They are also characterized by a directed flow of water. The sea and ponds are water bodies, in which there is no clear direction of water flow, and which are better characterized as places. Finally, all four terms refer to permanent water features. The remaining two nouns in Table 67 encode water features that are seasonal: lakabwa ‘distributary’ and onêbera ‘swamp’. The referents of these two are also pragmatically connected. The distributaries that appear after heavy rainfall often inundate larger areas, creating the areas referred to as onêbera ‘swamp’. Both lakabwa and onêbera are classified here as small, since their referents are never of the size comparable to the referents of barhā ‘sea’ or oni ‘river’. It should be kept in mind, however that there are no size-based counterparts of such terms, therefore the distinction may also be neutralized in these cases. Importantly too, the term lakabwa is a relational noun, as opposed to all other terms discussed in this section. This may imply that the template presented here cuts across the division into relational and non-relational nouns.

Non-relational terms for human-made landscape features, given in Table 68, are similarly organized by the same three oppositions: large–small, permanent–temporary, and place–path.

TABLE 68.
SEMANTIC OPPOSITIONS IN THE SUBDOMAIN OF HUMAN-MADE FEATURES

<table>
<thead>
<tr>
<th>path</th>
<th>place</th>
</tr>
</thead>
<tbody>
<tr>
<td>permanent</td>
<td>temporary</td>
</tr>
<tr>
<td>large</td>
<td>waboroko</td>
</tr>
<tr>
<td>small</td>
<td>bunaha</td>
</tr>
<tr>
<td>sorhi</td>
<td>banabo</td>
</tr>
</tbody>
</table>

Size distinguishes the referents of thoyoshikwa ‘city’ and shikwahu ‘village’, as well as those of waboroko ‘road’ and bunaha ‘path’. The first pair encode places (i.e. settlements), while the second express paths. Finally, all four terms refer to permanent human-made landscape elements. The remaining two—namely, banabo ‘outfield camp’ and sorhi ‘temporary path’—encode elements that are seasonal, though the two are not pragmatically related. There are therefore clear correspondences between the vocabulary for water features given in Table 67 and human-made landscape features, given in Table 68.
The situation is slightly different in the case of terms for vegetation features, given in Table 69. These are also organized by the opposition: large–small, but not by the oppositions permanent–temporary and place–path. This is not particularly surprising, since vegetation assemblages do not move and are not seasonal. Terms for vegetation assemblages are, however, additionally specified with respect to the presence or absence of two main vegetation forms, konoko ‘forest’ and karhow ‘savanna’, the water saturation of the area, and the degree of human involvement.

<table>
<thead>
<tr>
<th>SEMANTIC OPPONETIONS IN THE SUBDOMAIN OF VEGETATION FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>wet</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>large</td>
</tr>
<tr>
<td>small</td>
</tr>
</tbody>
</table>

The size of the referent distinguishes the nouns konoko ‘forest’ and karhow ‘savanna’, which encode large vegetation assemblages, from the wkili- and wkaro-ecotope terms that encode smaller, plant-based ecotopes. In chapter 5, I argued that water saturation differentiates wkili- and wkaro-ecotopes; the former refer to dry and the latter to wet areas. Importantly, the wkili- and wkaro-ecotopes do not align perfectly with the terms for the two major vegetation types: karhow ‘savanna’ and konoko ‘forest’. All patches of wkaro-ecotopes are located in the forest, but patches of wkili-ecotopes are part of the savanna, the edges of the savanna and forest, and in one case of the forest itself (i.e. the outlier case of beyokhowkili ‘patch of beyoka reed’). It is possible that the pattern would be clearer if more data were available. Alternatively, it is possible that the denotation of karhow and konoko should be revisited. In Table 69, terms for smaller ecotopes, the wkili-ecotopes and wkaro-ecotopes, are aligned with the terms for main vegetation types, karhow ‘savanna’ and konoko ‘forest’ respectively, but this correspondence should be treated as hypothetical. Finally, all such terms are opposed to the terms kairi ‘negative vegetation feature’ and kabuya ‘field’, both of which encode areas that can be thought of as absences in the two major vegetation forms konoko ‘forest’ and karhow ‘savanna’. Interestingly, the meaning of kairi depends on whether its referent is located in the forest, in which case it implies a clearing, or whether it is part of a savanna, in which case it encodes a clump of bush. In the Guyanese dialect, kairi can refer also to an island, which can be thought of as an absence in a water feature. In all three cases kairi denotes a landscape feature which is a natural absence in the main landscape form, as opposed to the referent of kabuya ‘field’, which is the result of human landscape management.

In sum, the non-relational landscape terms (and the relational noun lakabwa ‘distributary’) can be organized in terms of an underlying semantic template. Burenhult and Levinson (2009:153) have coined the term semplate ‘an abstract structure or template, which is recurrently instantiated in a number of lexical sets, typically of different form classes’ to describe similar phenomena. The Lokono semantic template includes a number of semantic oppositions, but each of them is instantiated to a different degree. Only the contrast between small and large entities...
recurs consistently through the subdomains of water, vegetation, and human-made features. The size distinction is, however, neutralized in the general landform term horhorho. The contrast between permanent and temporary landscape features as well as between paths and places are only encoded in the subdomains of water and vegetation features. The domain of vegetation features in turn comes with its idiosyncratic subset of distinctions. The oppositions are summarized in Table 70.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Water features</th>
<th>Human-made features</th>
<th>Vegetation features</th>
<th>Land features</th>
</tr>
</thead>
<tbody>
<tr>
<td>large–small</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>permanent–temporary</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>path–place</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dry–wet</td>
<td></td>
<td></td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>presence–absence</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>natural–manipulated</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

Size is consistently encoded by the non-relational vocabulary from the three subdomains of landscape. Importantly, the large–small opposition does not reappear in other word classes, therefore I refrain from calling the observed pattern a semtemplate. The collocational pattern of oni ‘river’ and onikhan ‘creek’ with the verbs fotikidin ‘enter non-containment’ and kodonon ‘enter containment’ is based on their features as open areas and containers, respectively, not on their size. This is evident when we look at the pair karkhow ‘savanna’ and konoko ‘forest’, which are of the same size in the typology given above, but collocate with different verbs—namely, fotikidin ‘enter non-containment’ and kodonon ‘enter containment’, respectively.

It is worth recalling, however, that the structure of proper place names of water and vegetation features is also sensitive to the size of the referent. In chapter 6, I showed that small water features are typically named after a particularly salient feature of the locality. Such features include the sensorimotor experiences typical of the area or its biotic and abiotic features. Occasionally, creeks are named also after events that took place in their vicinity. Structurally, names of small water features are either simplex, derived, or have the form of possessive phrases. Large water courses, on the other hand, are the only proper names of water features that consistently have the form of compounds. River names, though synchronically not fully analyzable, have the form of compounds with oni ‘river’ (i.e. names ending in wijne, wini, oeni, ony, uni, the reflexes of oni ‘rain/river’). Small vegetation features do not receive proper place names, but the derived generic wkili- and wkaro-ecotopes usually have a unique referent for the speaker—a patch that is relatively close and large enough to be of practical importance. Proper names of large vegetation features, on the other hand, are formed by compounding, just like terms for large water features. Such proper names do not reflect the physical features of the area, but locate the vegetation assemblage with respect to another place, typically a water feature. Large water features are therefore consistently named by
compounds, as opposed to names of small landscape features, that are either simplex, derived, or have the form of possessive phrases.

The parameter permanent–seasonal may be correlated with the observed differences in the encoding of spatial relations. The Locative Equation is used when the spatial relation of the Figure and the Ground is viewed as permanent. However, I do not have enough data to determine whether the permanent–seasonal opposition encoded at the level of the lexicon correlates with the permanent–accidental opposition encoded at the level of syntax. The permanent–seasonal opposition and the remaining four oppositions are too idiosyncratic to call them a semantic template.

The size-based semantic template is, however, an important finding in the light of the theory of landscape features developed by Mark and colleagues (Mark 1993; Mark et al. 1999; Smith and Mark 2001; 1999). According to Mark and colleagues, geographic entities differ from tabletop entities in that size is a categorial feature for the former type but not for the latter type of entities. The analysis of the what/where distinction showed that size is not a parameter of relevance to the Lokono type of split. It has, however, been observed that size accounts for a selection of the Marquesan data. Terms for smaller landscape features pattern like what-nouns, while terms for larger features pattern like where-nouns. The agglomerated results from Lokono and Marquesan, but also from languages such as English, suggest that size may indeed be a case of categorial predication in the domain of landscape features. However, languages may go differently about encoding it. Some languages may encode the size of landscape features at the level of the lexicon (e.g., English, Lokono), while other languages may resolve to encoding it at the level of the grammar—that is, by using the what/where distinction (e.g., Marquesan).

The question as to what extent the large–small opposition reflects the physical features of landscape—as in Mark and colleagues’ account—rather than the culturally-motivated necessity to distinguish such landscape elements of varying sizes remains open. The large–small opposition is neutralized in the Lokono subdomain of landforms, which scores low on both factors, suggesting that culture may also play a role. The cross-linguistic recurrence of the large–small factor stresses the fact that the physical features of entities—which are more similar across cultures than cultural practices—may be of more relevance. The opposition permanent–seasonal, although clearly distinguishing landscape features based on their ontological properties, is also of obvious significance to subsistence practices such as fishing, hunting, or travelling. The opposition path–place similarly correlates with different socioeconomic practices, for instance, trading and living, to name but two. The cultural basis of the wet–dry opposition was discussed at length in chapter 5 (and § 9.1). The opposition natural–manipulated is by definition entangled into agricultural practices. Finally, the opposition presence–absence appears also to entail different cultural practices; clearings in the forest attract certain types of mammals which can be easily shot at in the open space. Clumps of bush in the savanna, on the other hand, are places where birds that come to feed on the fruits of the bushes become an easy target for hunters. In conclusion, the motivation for the semantic oppositions expressed at the level of the lexicon cannot be determined. In chapter 5, I argued on the example of the ecotopic vocabulary that the distinction between culture and nature is problematic. The larger picture of the semantic
oppositions in the domain of landscape lends further support to this claim, since none of the lexical distinctions can be attributed exclusively to either culture or nature.

9.3 Relational and configurational landscape terms

Apart from non-relational landscape terms, there are a number of nouns used in the domain of landscape that are relational in nature, and therefore inalienably possessed. Such nouns include relational nouns specific to the landscape domain and those used across many semantic domains. In chapter 4, I showed that the latter type is profusely used in the subdomain of landforms. Although less common, general relational nouns such as rhebo ‘edge’ are also used in the subdomain of water features, vegetation assemblages, and human-made landscape features. There are also a number of relational nouns specific to the domain of landscape (Table 71).

Such nouns are only found in the subdomain of water features, and include nouns that are most likely simplex (e.g., babo ‘underwater cavity’) or derived from body part terms (e.g., shirima ‘headland’, from shiri ‘nose’).

<table>
<thead>
<tr>
<th>Noun</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>babo</td>
<td>an underwater hole between the roots of a tree growing by the bank of a creek, in which certain types of fish are found</td>
</tr>
<tr>
<td>dako</td>
<td>a tributary of a creek, river, or the sea, unanalyzable but possibly related to the active verb dakan ‘urinate’</td>
</tr>
<tr>
<td>lakabwa</td>
<td>a distributary of a creek or a river, typically one that joins the same water feature later along its course, possible related to the verb lakadun ‘scatter’</td>
</tr>
<tr>
<td>ima</td>
<td>a mouth of a creek or a river ending in another creek, river, swamp, or the sea; the body part term rheroko ‘lips’ is sometimes used with the same meaning</td>
</tr>
<tr>
<td>shirima</td>
<td>headland, a piece of land jutting out from the bank of a water feature, possibly related to the body part term shiri ‘nose’</td>
</tr>
<tr>
<td>kaikaya</td>
<td>whirlpool, a dangerous place typically associated with the water spirit oriyo.</td>
</tr>
</tbody>
</table>

The fact that only in the subdomain of water features there are specific relational nouns for naming parts of entities may be taken as a token of the cultural salience of water features. The relational noun babo ‘underwater cavity’ is of particular importance to fishing practices. The noun kaikaya ‘whirlpool’ denotes a potentially dangerous disturbance in water flow, associated with the water spirit oriyo. In the light of the exploitation of water features as a transportation network, the utility of the terms dako ‘tributary’ and lakabwa ‘distributary’—encoding relations between different parts of such networks—is also evident. The specific cultural significance of the referents of the remaining two nouns ima ‘mouth’ and shirima ‘headland’ is not clear. Interestingly, the former has a synonym, which is a general relational noun rheroko ‘mouth’. The latter is in turn based on a body part term shiri ‘nose’. The linguistic encoding of both landscape features shows therefore resemblances to the domain of general relational nouns, which are not specific to any domain. Worth reiterating is also the fact that shirima ‘headland’ refers in fact to a piece of land, but
is considered to belong in the domain of water features, since its possessor encodes a water feature. In this case, the physical features of the landscape element—the fact that it is a special case of the border between land and water—may be underlying the lexicalization of this specific relational distinction.

Whether specific or general, relational nouns can appear with the 3rd person feminine prefix or form non-lexicalized possessive phrases with another landscape term. Similarly, configurational nouns can appear with the 3rd person feminine prefix or form non-lexicalized possessive phrases with another landscape term, encoding the spatial configuration of the landscape element. All such possessive phrases are not lexicalized. As a whole, such complex expressions form a system of landscape classification based on partonymic and spatial relations. Complex landform terms are an extreme manifestation of this system, since landforms are not partitioned at the level of the lexicon. The complex landform terms form a field-based system of landform categorization, in which each point in the space defined as horhorho can be given a nominal value from the set of relational and configurational nouns. As such, the Lokono model is sensitive to what the Figure is and where it is relative to the observer. It is the relation between the Figure and the observer with respect to horhorho, as encoded in the relational and configurational terms, that provides the grid for partitioning horhorho. In other words, the way horhorho is divided depends largely on what we want to locate and where we are. The non-lexicalized status characteristic of the domain goes hand in hand with this inherent perspectivism. It is therefore tempting to think of this system in terms of the physical features of the local landscape, which often prevents the observer from observing the changes of the relief from a distance. This may underlie the fluidity of the system, since the shape of the land is often only visible in situ.

The complex landform terms with relational and configurational nouns are formally similar to complex names of plants and animals as well as complex body part terms. In the domain of ethnobiological terms, possessive phrases with relational nouns are common. In the domain of human body part terms, both possessive phrases with relational and configurational nouns (e.g., shiri loko ‘nostril’) are attested. In contrast to landscape terms, however, complex plant and animal terms encoded by possessive phrases with relational nouns are metaphorical in nature. The plant name hashiro khabo (lit. ‘otter’s paw’), for instance, is a type of moss, the shape of which resembles the paws of the animal. Semantically, the system of landform expressions bears more similarities to the domain of human body terms—in which the relations are partonymic and spatial. However, as opposed to the domain of landscape, in which the possessor can be expressed by a full noun (e.g., horhorho ‘landform’), there is no lexicalized unique beginner of the domain of human body that can function as the possessor of body part terms. Body part terms appear normally with personal prefixes or pronouns. Moreover, both body part terms and ethnobiological terms are lexicalized (though to differing degrees), while complex landscape terms are not.

On the whole, the general architecture of the language pervades all three domains: human body, plants and animals, and landscape. What makes the expression of landscape different is therefore the lesser degree of lexicalization and the lexicalized term for the unique beginner, which singlehandedly covers the whole domain at a higher level of granularity. The language system as a whole explains the
use of possessive phrases. The lesser degree of lexicalization of the possessive phrases and the existence of just one lexicalized general landform term is attributed to the physical features of the land, which often prevents the observer from observing the changes of the relief and the relatively low cultural significance of landforms. The existence of specific relational nouns in the domain of water features in turn may be taken as the reflection of the higher cultural salience of the referents.

9.4 Landscape terms in spatial constructions

A fundamental question asked at the onset of the thesis was whether landscape elements differ in terms of their ontological features from other entities, particularly from tabletop objects, and whether such differences are reflected in the linguistic encoding of both types of entities. Throughout the thesis, I have demonstrated that, when functioning as Grounds in spatial expressions, Lokono landscape terms necessitate the *where*-marker—that is, they belong to the category of *where*-nouns. The *what*/*where* distinction is found in the cognitively universal directionality component of the spatial expression, and takes the form of the differential directionality marking. The distinction manifests itself in the location and goal directionality, but not in the source directionality—a fact that may be attributable to the cognitive goal bias. The *what*- and *where*-categories are internally structured within a single language, and differ in terms of their membership cross-linguistically. Yet, a preliminary hierarchy depicting the order in which the *what*- and *where*-categories expand has been proposed. The comparative analysis of the *what*/*where* distinction in chapter 8 proves that, in languages that do distinguish the two categories, nouns denoting landscape features form one of the most likely classes of nouns to be categorized as *where*-nouns. Within the domain of landscape vocabulary, place names are particularly susceptible to the *where*-marking, preceded only by nouns encoding spatial regions (i.e. configurational nouns). As shown in chapter 6, in Lokono the *where*-marking, combined with the exponents of the category of proper nouns, allows in fact to single out Lokono place names from the rest of the lexicon. Finally, in chapter 7, I have argued that the *what*/*where* distinction is a type of nominal categorization, analagous to the mass/count dichotomy that operates in the quantifying expressions—it has a specific grammatical locus and it is ontologically motivated. The rare cases in which a landscape term can be combined with the *what*-marker, discussed in chapter 4 and 7, dramatically, though systematically, alter the meaning of the noun, changing its reference to that of a perceptually delimited object.

The fact that landscape terms are categorized as *where*-nouns has far reaching consequences for linguistics and cognitive geography. As demonstrated in chapter 8, underlying the *what*/*where* distinction are the ontological features of the referents of *what*- and *where*-nouns. Perceptual boundedness and texture of boundary change monotonically along the cline from *what*-nouns to *where*-nouns based on the comparative data from the three languages. Perceptual boundedness accounts fairly well for the Lokono type of split, suggesting that Lokono landscape terms encode perceptually less bounded entities than Lokono *what*-nouns. Importantly, *where*-nouns include also a number of nouns that encode entities other than landscape
features—namely, structures and spatial regions. It is therefore not possible to define the domain of landscape in terms of the what/where split alone. Nevertheless, the distinction proves that landscape terms encode entities that are ontologically different from typical tabletop objects, or first-order entities in Lyons’ (1977) terminology. In the Lokono case, perceptual boundedness is the operative factor. Beyond the domain of landscape, the what/where distinction raises a more general question of what ontological features are important to human cognitive processes and systems, such as language. By untangling the possible ontological parameters underlying the split observed in the spatial expression, I have thus contributed to the long-standing discussion about the nature of place, which in languages such as Lokono as may be operationalized as a function of perceptual boundedness.

The observed linguistic patterns lend therefore further support to the theory of geographic entities proposed by Mark and colleagues, who postulate a profound ontological disparity between geographic entities and tabletop objects (Mark 1993; Mark et al. 1999; Smith and Mark 2001; 1999). At the same time, however, the linguistic data show that not all parameters identified by Mark and colleagues play a role in the linguistic encoding of landscape reflected in the what/where distinction. The type of boundary parameter turned out to be particularly misaligned with the what/where distinction in all three languages under study. Location as accidental or categorial predication motivates only the observed shifts between relational and configurational nouns. Furthermore, although cross-linguistically a single what/where cline can be detected, the languages place their language specific cut-off point between the two categories in different places, which may suggest that different ontological properties are prioritized by different communities of speakers. Perceptual boundedness may underlie the Lokono type of split, while the texture of boundary accounts fairly well for the Makalero system. Size, on the other hand, turned out to be of relevance to a subset of landscape nouns in Marquesan. The analysis presented, however, suffers from the treatment of the five parameters discussed by Mark and colleagues as binary. Clearly some of them should be operationalized as gradable functions, allowing for a more detailed inspection of the ordering of the entities with respect to the parameter vis-à-vis the linguistic distribution.

In chapter 7, I hypothesized further that the function of the what/where distinction is to mark certain nouns as encoding prototypical Grounds or prototypical Figures. Viewed from this perspective, landscape terms encode prototypical Grounds. The proclivity of landscape terms to appear as Grounds in spatial expressions is evident. First, nouns belonging to the where-category in general are less marked than nouns belonging to the what-category in spatial expressions. Such formal differences in marking can be taken as a sign of functional markedness: more formally marked forms are functionally more marked. Second, numerous landscape expressions, particularly a number of landform terms discussed in chapter 4, are headed by configurational nouns, which are only used as objects of the verb under restricted circumstances. More naturally, such expressions are used with the directionality markers, encoding the location, goal, or source, and can hardly be extracted from such grammatical contexts. They are inextricably linked to their role as Grounds in spatial expressions. In practical terms, this implies that when eliciting Lokono geographic terms it is important to ask the right questions.
Landscape terms may be a more felicitous answer to a *where*-question rather than to a *what*-question. Furthermore, the fact that landscape terms are categorized as *where*-nouns—that is, nouns denoting prototypical Grounds—implies they do not encode prototypical Figures. Further supporting evidence for the functional importance of the *what*/*where* split in the case of landscape features comes therefore from their grammatical behavior as Figures in spatial expressions. In chapter 3, I have shown that landscape terms, in the rare cases when they do encode Figures in spatial descriptions, require an equative construction rather than the unmarked Basic Locative Construction. This special construction, called the Locative Equation, is used when the spatial relation between the Figure and the Ground is seen as permanent. The ontological properties of landscape features—particularly the fact that they are permanently located in space—render the spatial configurations in which they function as Figures particularly prone to such interpretations. As pointed out above, however, it remains to be investigated whether the syntactic difference in encoding spatial relations correlates with the permanent–seasonal opposition found at the level of the lexicon.

Summing up, the *what*/*where* distinction is a type of noun categorization that characterizes the nominal lexicon as a whole. The general architecture of the language accounts therefore for the way landform terms pattern with respect to the different directionality markers. Since the distinction is ontologically motivated, it does reflect the physical features of entities, including landscape elements. The physical features of landscape elements reflected in this type of nominal categorization do not lead to the discrimination of different landscape terms and their referents. Rather, the domain of landscape as a whole is grouped together with other nouns denoting perceptually unbounded entities, and opposed to nouns denoting perceptually bounded entities.
English summary: The linguistic encoding of landscape in Lokono

This thesis investigates the how landscape elements are expressed linguistically in Lokono (Arawakan). As a background to the analysis, an account of language vitality and a description of the grammar of space are given. The linguistic analysis of landscape starts with landform terms, which form a system of non-lexicalized phrases sharing a generic term *horhorho* ‘landform’. The findings reveal that landscape vocabulary is organized on partonymic and spatial relations. Second, I discuss vegetation terms, which distinguish terms for dry and wet areas of vegetation. The results point to the body of environmental knowledge encoded in such vocabulary and the importance of socio-cultural practices in shaping the system of landscape classification. Third, I focus on place names, discussing their morphosyntactic, sociolinguistic, referential, and semantic properties. Lokono place names form a language-externally definable class, identified by the proper/generic distinction and the what/where distinction—a type of noun categorization discussed in the remaining chapters. What-nouns encode entities that are prototypical Figures, while the where-nouns encode entities that are prototypical Grounds. The distinction is found in the cognitively universal directionality component of the spatial expression and is based on the ontological properties of the referents. A comparative study of the distinctions in three languages identifies a hierarchy of nouns illustrating the likelihood of a noun being categorized as a what- or where-noun. The cline is analyzed in the light of the cognitive geography theory of objects and places, shedding light on which ontological properties of landscape are grammaticalized in language structure.
Nederlandse samenvatting: De taalkundige codering van landschap in Lokono

Dit proefschrift onderzoekt de codering van landschap in de Lokono taal. Als achtergrond bij deze analyse wordt een beschrijving van de taalvitaliteit en de grammatica van ruimtelijke uitdrukkingen gegeven. De taalkundige analyse van landschap introduceert ten eerste termen voor terreinvormen, die een systeem van niet-gelexicaliseerde sintagma’s vormen die de generieke term horhorho 'terreinvorm' gemeenschappelijk hebben. De bevindingen laten zien dat het landschap-vocabulaire wordt ingedeeld aan de hand van partonimische en ruimtelijke relaties. Ten tweede bespreek ik termen voor vegetatie, die onderscheid maken tussen droge en natte gebieden. De resultaten wijzen op het totaal aan omgevingskennis dat gecodeerd is in een dergelijke woordenschat en op het belang van socio-culturele gebruiken in het vormgeven van het systeem van landschapsclassificatie. Ten derde richt ik me op plaatsnamen, waarbij ik hun morfosyntactische, sociolinguïstische, referentiële en semantische eigenschappen bespreek. Plaatsnamen in het Lokono vormen een groep die taal-intern definieerbaar is, en die geïdentificeerd kan worden door het onderscheid tussen de opposities eigen/generiek en wat/waar. Deze manier van categorisering van zelfstandige naamwoorden wordt besproken in de overige hoofdstukken. Zelfstandige naamwoorden van het type wat coderen entiteiten die prototypische Figures zijn, terwijl de waar-zelfstandige naamwoorden coderen entiteiten die prototypische Grounds zijn. Dit onderscheid is gelokaliseerd in de cognitief universele richtingscomponent van de uitdrukking van ruimte en is gebaseerd op de ontologische eigenschappen van de referenten. Een vergelijkend onderzoek naar dit onderscheid in drie talen heeft een hiërarchie van zelfstandige naamwoorden blootgelegd die de waarschijnlijkheid dat een zelfstandig naamwoord wordt gecategoriseerd als een wat- of als een waar-woord illustreert. Deze schaal wordt geanalyseerd in het licht van de theorie van objecten en plaatsen uit de cognitieve geografie, hetgeen licht werpt op de vraag welke ontologische eigenschappen van het landschap gegrامmaticaliseerd worden middels taalstructuur.
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