

SERI LANDSCAPE CLASSIFICATION AND SPATIAL REFERENCE

by

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Abstract

This thesis contributes to the growing field of ethnophysiology, a new subfield of cognitive anthropology that aims to determine the universals and variation in the categorization of landscape objects across cultures. More specifically, this work looks at the case of the Seri people of Sonora, Mexico to investigate the way they categorize landscape objects (e.g., mountains, streams, deserts) that exist in their territory through the way they talk about them in their language. It describes what kinds of landscape objects get lexicalized and examines the structural and semantic properties of the resulting landscape terms. Another focus of this thesis is the grammar of space in Seri. This thesis provides the first in depth look at spatial reference in Seri, providing a larger context for the discussion of landscape categorization. Additionally, this thesis provides significant contributions to the documentation and description of the Seri language and culture, presenting the first detailed description of the grammar of space in Seri.

Abbreviations used in interlinear glosses

ABS – absolute	IRR – irrealis
ART – article	LOC – locative
AUX – auxiliary	MED – medial
CAUS – causative	NEG – negative
DECL – declarative	NMLZ – nominalizer
DEF – definite	OBJ – object
DEM – demonstrative	OBL – oblique
DEP – dependent	PART – particle
DETRANS – detransitivizer	PASS – passive
DIR – direct	PL – plural
DIST – distal	POSS – possessive
DP – decent past	PROX – proximal
DS – different subject	REAL – realis
EMPH – emphatic	RP – recent past
IMPERF – imperfective	SBJ – subject
INDEF – indefinite	SG – singular
INF – infinitive	SUBJUNC – subjunctive
INTERR – interrogative	UNSPEC – unspecified
INTRANS – intransitive	

1 Introduction

1.1 The landscape domain in Seri

The landscape domain presents an interesting and rather challenging area in which to conduct an investigation of linguistic categorization. For instance, consider the landscape term *mountain* in English. What constitutes an instance of a mountain for English speakers? Is it a convex geographic feature that is necessarily larger than a geographic entity that could be labeled *hill*? Does a mountain have to have a pointy top or ridge area or can it be rounded? What are the boundaries of where a mountain begins and ends? Due to the large-scale nature of most geographic features, their existence as objects is made much more questionable than artifacts, for instance (Mark and Turk 2003). Most geographic features are parts of or regions of the Earth's surface but are considered separate entities from one another based on principles which, at this point, seem to be language-specific. Even though landscape objects all over the world share similarities in that they were formed by similar geomorphic processes, they do not seem to be able to be organized into kinds based on these geomorphic processes (Mark, Turk and Stea in press). This seems to be a factor that distinguishes landscape objects from other natural kinds, such as plants and animals. One of the overarching questions in ethnophysiography, the ethnoscience of landscape, is discovering the principles that distinguish different parts of the Earth's surface that get labeled by a given language and how the resulting geographic entities are categorized by speakers.

This thesis looks at the way the Seri people, or *comcaac*, as they call themselves, of Sonora, Mexico categorize landscape objects¹ that exist in their territory through their language. It presents the first detailed description of the kinds of landscape objects that get lexicalized in Seri and examines the structural and semantic properties of the resulting landscape terms. As a necessary background to the discussion of landscape categorization, this thesis also provides the first in depth description of the grammar of space in Seri, including a thorough examination of motion event descriptions, locative descriptions and spatial frames of reference in Seri. The research questions addressed in this thesis include the following:

- How do the Seri people delimit the landscape that they inhabit and how is this reflected in their language?
- How do they label landscape entities? And what does the way they label the landscape tell us about how they conceptualize the landscape?
- Is the landscape domain a domain that is populated by entities? What about events, do they play a role in the landscape? If so, what role do they play and how is this reflected in the lexicalization of landscape concepts?
- What are the lexical semantic structures found within this domain? And are the lexical semantic structures of the landscape domain similar to other domains such as that of flora and fauna?
- How is landscape categorization in Seri different from that in other languages to the extent that we currently understand it?

¹ I use *landscape objects* here as a cover term for different kinds of geomorphological and topographic features of the Earth, including water bodies (e.g., lakes), water forms (e.g., rivers), landforms (e.g., mountains and valleys) and assemblages of vegetation (e.g., forests). In particular, what I am interested in here are those landscape features that are represented as entities, which differs across languages and cultures. I use the term *geographic entity* as a synonym for *landscape object*.

This thesis also provides a descriptive account of the grammar of space in Seri, which, on its own, is the first comprehensive look at spatial reference in Seri. The discussion of spatial reference in Seri is relevant to the discussion of landscape classification in that landscape entities serve as natural landmarks in spatial descriptions. This is shown by the occurrence of landscape terms as ground-denoting nominals in locative and motion event descriptions, as well as the anchors for certain frames of reference. In order to describe how landscape terms are used in natural discourse, it is crucial to include a discussion of Seri locative and motion event descriptions as part of this thesis. This portion of the thesis addresses the following questions:

- How are locative predications expressed in Seri? What are the set of locative verbs used in locative descriptions?
- How do Seri people describe motion events? How does path get expressed in motion event descriptions?
- What types of coordinate systems or spatial frames of reference do they use to locate one object with respect to another? How can this be described using the existing typologies of spatial frames of reference?

1.2 Ethnophysiography

As already mentioned, this thesis contributes to the field of ethnophysiography, which is the term used to describe the study of native terminologies of landscape objects that was proposed by Mark and Turk (2003). However, Mark and Turk were not the first researchers who showed an interest in the way speakers of different languages categorize the landscape they inhabit. Similar lines of research have been given different labels in the past, including *ethnobiogeography* (Hunn and Meilleur 1998), *geographical ontology*

(Burenhult 2004) and *ethnoecology* (Johnson 2000). Although there are many similarities between these differently labeled approaches, I will be utilizing the term *ethnophysiology* to describe the field that the research in this thesis falls under.

Ethnophysiology falls within the domain of cognitive anthropology (or ethnosemantics), which looks at the linguistic organization of a particular semantic domain and investigates to what extent that organization is determined by culture-specific criteria and to what extent it is determined by universal principles of categorization. Examples of relevant studies in cognitive anthropology include Berlin and Kay's seminal work on basic color terms (1969), Lounsbury's study of kinship terminology (1964), and research on ethnobiological classification like Berlin, Breedlove and Raven (1974). Ethnophysiology is an extension of this kind of research in that it investigates to what extent universals and cross-cultural variation exist in the linguistic and non-linguistic categorization of landscape objects.

Previous work in ethnophysiology has looked at the landscape domain from different angles. Mark, Smith and Tversky (1999) conducted experiments with American English speakers to investigate how they categorize landscape objects. Smith and Mark (2003) focus on ontological issues surrounding the landscape domain, such as the ontological status of mountains. Mark's more recent work in collaboration with Turk (2003) has a crosslinguistic and cross-cultural emphasis. Mark, Turk and Stea are collaborating on a project which looks at the lexical classification of landscape objects by the Yindjibarndi people of northwestern Australia and the Navajo people of Arizona and New Mexico (see, e.g., Mark, Turk and Stea in press).

The Space Project of the Max Planck Institute for Psycholinguistics began conducting research on terms for landscape objects and on toponyms in 2002. Bohnemeyer (2002b) created a questionnaire which was designed to investigate the grammatical and semantic properties of toponyms with special emphasis on the ontological distinction between places, landscape entities, and human settlements.² Burenhult (2005, 2008) describes the use of body metaphors to capture the mereological structure of bodies of water in Jahai, a language spoken by a group of hunter-gatherers on the Malay Peninsula. More recent work by researchers at the Max Planck Institute for Psycholinguistics and associates is presented in a special issue of *Language Sciences* that focuses on language and landscape in typologically unrelated languages (including O'Meara and Bohnemeyer 2008).

The focus of this dissertation is on the aspects of the Seri language utilized when Seri speakers make reference to landscape objects that exist in the Seri territory. This dissertation documents and describes the landscape domain as categorized in Seri. Various methods, described in detail in Chapter 3, are employed in this study to ensure that the landscape domain in Seri is comprehensively described. This description contributes to ethnophysiography by enhancing our understanding of universals and cross-linguistic variation in the landscape domain, as well as further developing the methodology that can be used and further developed in future ethnophysiographic studies. In particular, in this study I employed methods such as in-situ route descriptions as a means to discover landscape terms as they occur in natural discourse and landscape

² See Enfield, Kelley and Sprenger (2004: 71-73) for a summary of some of the research that was conducted using this questionnaire by Stephen C. Levinson and Gunter Senft on the Papuan languages Yéli Dnye and Kilivila.

diagramming, which allowed for the discovery of parts of landscape objects as determined by a native speaker consultant.

1.3 This study

A core component of this thesis is the grammar of spatial reference in Seri. The representation of space in language has been a topic of particular interest to researchers within the field of cognitive linguistics, especially in the work of Talmy (1978, 1983, 2000a, 2000b), Langacker (1987), Lakoff (1987), as well as Svorou (1988), to name just a few. One of the points that is recurrent in many of these works is to what extent there are universals of spatial representation in language and then deciphering what those universals are. One realm that has been investigated by various researchers is locative predication, which involves descriptions of the location of an object or objects as being in a particular place. Using terminology from Talmy (2000: 184), a figure, or the object being located, is described as being in a particular topological relation with a ground, a reference entity with respect to which the figure is located. The topological relation that the figure and ground can be described as being in can include contiguity, containment, adjacency, etc. Cross-linguistic research in the domain of locative descriptions with a focus on spatial relations has been conducted as part of a semantic typology study by members of the Language and Cognition Group at the Max Planck Institute for Psycholinguistics in Nijmegen (Levinson *et al.* 2003). A discussion of locative descriptions in Seri can be found in 5.1.

Motion event descriptions are also relevant to the realm of spatial representation in language. In particular, a figure object moves in a particular path with respect to a ground or reference entity. The way in which path is encoded in language has been a

topic of interest to researchers such as Talmy (2000) and Jackendoff (1983). Jackendoff (1983) makes a distinction between different conceptual functions relevant to locative predications and motion event descriptions: place and locative/path functions. The place function is one that maps the ground into a particular place. Locative/path functions are functions that map the place onto the locative state of the figure being in that place or as the figure moving along the specified path type. For instance, in (1) the place function is expressed by the preposition *under*, in order to locate the place projected from the ground object where the figure is located and the locative function is expressed by the verb *be* to indicate the location of the figure. In (2) the place function is expressed by the preposition *under*, but the path function could vary depending upon whether the dog went under the table and stayed there or whether the dog was moving and, through the course of its movement, went under the table (and continued going elsewhere).

(1) *The dog is under the chair.*

(2) *The dog went under the chair.*

The way that these conceptual functions are expressed varies cross-linguistically (see, e.g., Pérez Báez and Bohnermeyer 2008). Thus, investigating the structure of the ground phrase, the phrase that contains the ground-denoting nominal, can reveal the way that languages encode place and locative/path functions. A discussion of motion event descriptions in Seri is presented in 5.3.

A further distinction that is relevant to the discussion of spatial reference in language is that of topological vs. projective place functions (following Piaget and Inhelder 1956). Projective place functions involve a frame of reference and its application is dependent on the orientation of the ground, observer and the array of the figure and

ground (taking from Levinson's 2003 discussion of properties of frames of reference). Topological place functions, on the other hand, are perspective free, in that their application does not depend on the orientation of the ground, observer or array of the figure and ground. Spatial frames of reference are coordinate systems that are used to "project" place functions from the ground object (see, e.g., Levelt 1984, 1996; Levinson 1996, 2003). Spatial frames of reference are assumed by speakers in order to interpret perspective-dependent descriptions of the location of an object or objects. Consequently, frames of reference are an important component to understanding the way speakers talk about the location of objects in space. A discussion of frames of reference in Seri is presented in 5.5.

In addition to the discussions of spatial reference in Seri, this thesis also shows that Seri landscape classification is dominated by a system of lexicalization involving complex terms. These complex terms are syntactic compounds involving a classificatory substance term that lexicalizes a substance³ and an additional lexical item (or items) that provides further information, narrowing down the possible reference of the complex term. Interestingly, there is a scarcity of monomorphemic lexicalization in the Seri landscape domain. The simple, monomorphemic landscape terms lexicalize concepts that do not seem to fit under the classification system involving the classificatory substance terms.

As part of my investigation of the landscape domain in Seri, I investigated the lexical semantic structures present in the domain, something that, to my knowledge, has

³ The lexical classification of the landscape with respect to the material consistency of landscape objects in Seri seems to be similar to a classificatory strategy that has been observed in the Athabaskan language Navajo (David Mark, pc). In particular, Navajo landscape terms, like those in Seri, frequently contain a substance-denoting term such as those that refer to the substance 'rock' or 'water'.

not comprehensively been done in any language for this domain. In particular, I look at what kinds of hierarchical relations hold among landscape terms in Seri, in particular, taxonomical (kind-of) and meronymical (part-of) relations. In addition to providing insight into the conceptual construal of the landscape in Seri, this type of analysis also sheds light on the question as to whether there is a “basic level” in the lexicalization of landscape entities in Seri, comparable to the findings of Berlin (1992) and others in the area of flora and fauna. My findings show that the taxonomy of the landscape domain in Seri is shallow. In other words, there are not very many levels that constitute a hierarchical structure of landscape terms based on taxonomic relations. There is no unique beginner node in the Seri taxonomy of landscape, nor are there prominent specified levels. Given what we know about landscape and geographic features in general, is this an expected result? It is hard to say whether the Seri landscape taxonomy is representative of other languages or not since there is not much in the way of comparable data from other languages. However, preliminarily it is similar to what has been observed in English, Yindjibarndi and Navajo (David Mark, pc). This work serves as the first of its kind. Future studies of landscape classification and landscape taxonomy can be compared to the findings presented here.

The data presented in this dissertation comes from fieldwork I conducted between 2004 and 2008 in one of the two Seri villages, *Haxöl Iihom*, which in Spanish is called *El Desemboque del Río San Ignacio*, located in the northwestern part of Sonora, Mexico. The total amount of time spent in the field was approximately 31 weeks. The first trip in the summer of 2004 was an exploratory trip to visit El Desemboque in order to be introduced to the community to see if I could gain permission to come back and conduct

research and to see if it was a place in which I felt comfortable living. There was one last trip in the summer of 2009, which was also very brief, as the purpose of it was to touch base with the community and discuss what would be presented in the dissertation with Seri elders and anyone else who had an interest. The trips that took place between 2004 and 2009 were each 6 weeks long or longer and all of them took place during the summer with the exception of the 2008 field trip, which took place in the fall. The fall field trip not only provided me with cooler weather, but also a chance to go out and collect certain plant material that is not available in the summer, as well as the opportunity to participate in cultural activities that are less commonly practiced in the summer months.

The diverse landscape and vegetation found in the Seri territory and the Seri people's tradition of hunting and gathering within their large territory provide a rich setting in which to conduct an ethnophysiological study. In addition, Mexican culture and Spanish language appear to slowly be changing daily aspects of Seri life. Thus, children are increasingly exposed to Spanish and families' lifestyles are slowly shifting to ones more similar to their Mexican neighbors, which include Spanish language television and mobilization which relies on the use of motorized vehicles. With this shift in lifestyle, it appears that the younger generations are not acquiring the language and knowledge associated with the landscape the way the older generations of Seri people did since they are not experiencing the landscape the way older generations did. This study serves to provide a documentary record of the current way the Seri people conceptualize the landscape through the way they talk about it.

1.4 Structure of this dissertation

The structure of this dissertation is as follows. In general terms, Chapters 2-4 serve as background information on the Seri language, the Seri people, their culture and their territory. Chapters 5-6 present a discussion of the grammar of space in Seri. Chapters 7-9 focus on the landscape domain. More specifically, chapter 2 provides a brief overview of the Seri people, their history and culture and certain aspects of their territory including the geographic setting. Chapter 3 presents the methodology that was used to collect the data that is presented in this dissertation, including information regarding tasks that were used to elicit data. Chapter 4 offers some background information on Seri grammar as it is relevant to the data presented in subsequent chapters, with an emphasis on verb and noun morphosyntax, as well as some basic typological information about Seri.

With respect to the chapters that focus on the grammar of space in Seri, chapter 5 presents a discussion of the grammar of spatial reference in Seri, with a focus on locative descriptions, motion event descriptions and spatial frames of reference, as discussed above. More specifically, I provide a description of the types of predicates and the types of constructions used to locate objects in space. I also discuss motion verbs used in descriptions of motion events, as well as the encoding of path in motion event descriptions. The grammar of spatial reference in Seri is an important aspect of the Seri language to describe in and of itself, but it is also important as a component of understanding the way that ground objects are referred to in Seri discourse, as landscape objects frequently act as natural landmarks that serve as grounds. Chapter 6 focuses on the role that posture roots play in Seri grammar, both as the heads of locative predicates and also as the bases for determiners in the language. Posture verb roots are the preferred

type of verb root used in prototypical locative descriptions in Seri. This is illustrated with the locative predications in (3) and (4), where each contains a posture verb: *-oom* ‘lie’ in (3) and *-oop* ‘stand’ in (4).

- (3) *I-c-aaspoj*⁴ *com* *hant i-ti* *i-c-aaspoj*
 3.POSS-UNSPEC.SBJ-write DEF.ART.SG.lie land 3.POSS-on 3.POSS-UNSPEC.SBJ-write
com *i-ti* ***m-oom***.
 DEF.ART.SG.lie 3.POSS-on RP-lie
 ‘The pencil (lit. with which one writes) is on the desk (lit. land on which one writes).’ (GHF BowPed 59)

- (4) *Cmaacoj cop* *ha-aco* *cap*
 man DEF.ART.SG.stand ABS.POSS-house DEF.ART.SG.stand
i-sxap *hac* *i-ti* ***y-oop***.
 3.POSS-top.of.head DEF.ART.SG.LOC 3.POSS-on DP-stand
 ‘The man is standing on the roof of the house.’ (GHF BowPed 34)

Additionally, determiners in Seri are derived from nominalized verb forms of posture, motion and locative verbs and occur as part of nearly all noun phrases. The determiners derived from posture verb roots play a significant role as part of the system of landscape classification exhibited by complex landscape terms in Seri. This is illustrated in (5) with *hast cop* ‘the mountain’ and *hant com* ‘the ground’ and in (6) with *hast com* ‘the mountains’. The definite article *cop* is derived from *-aap* ‘stand’ and the definite article *com* is derived from *-oom* ‘lie’.

- (5) ***Hast cop*** ***hant com*** *ano*
 stone DEF.ART.SG.stand land DEF.ART.SG.lie 3.POSS.in
moca *ha*.
 toward.SBJ.NMLZ.move DECL
 ‘The mountain comes from the ground.’

- (6) ...*hehe an* *xah hast com* *i-hiin* *hant taax*
 wood 3.POSS.area and stone DEF.ART.SG.lie 3.POSS-place.near land DEM
i-ti *ha-t-oii* *toc ha-t-oii* *ma...*
 3.POSS-on 1.PL-REAL.DEP-stand there 1.PL-REAL.DEP-stand DS
 ‘...we were living there in the desert on the side of the mountains...’
 (MLA 5/30/07 1)

⁴ Following Marlett (p.c.), there is a zero nominalizer here.

This chapter also contains a lexical semantic account of the interpretation of terms involving posture-based determiners, which involves coercion effects based on the selection restrictions imposed by the posture verb root. This can be seen with *hast cop* and *hast com* in examples (5) and (6), respectively, where each of the landscape terms contains the classificatory substance term *hast* ‘stone’, which lexicalizes a substance. I claim that the interpretation of such terms as referring to objects as opposed to substances results from coercion effects.

The chapters that focus on landscape classification build on the information provided in the previous chapters on spatial reference in Seri. Chapter 7 provides a discussion and analysis of how landscape concepts are lexicalized in Seri, with particular emphasis on the structure and semantics of complex landscape terms. Chapters 8 and 9 present information regarding the lexical semantic structures that exist in the Seri landscape domain. Chapter 8 contains a discussion of taxonomic structures in the Seri landscape domain, looking at the hierarchy of linguistic terms that refer to landscape objects in Seri. This chapter discusses hierarchical kind-of relations between concepts expressed by landscape terms. This discussion provides insight into similarities and differences between the landscape domain and other lexical semantic domains in Seri, especially other domains that refer to natural kinds. Chapter 9 provides a description of the meronymical relations that exist between landscape terms in Seri. Some meronyms are part of complex landscape terms in Seri. Part-naming is itself used as a strategy for reference to landscape objects in Seri, constituting one particular type of complex landscape terms. Finally, Chapter 10 presents some conclusions and summarizes the main findings of this dissertation.

2 The Seri people, their language and their territory

This chapter discusses background information on the Seri people, the language that they speak and the territory in which they live. This chapter provides a context for the data presented throughout the rest of the dissertation, it sets the scene and gives the reader an idea of where the Seri people live, what exists in their territory and how they use and have used their territory for their own purposes.

2.1 The Seri people

The Seri people, or *comcaac*, as they refer to themselves, are an indigenous group of people who live on the mainland side of the coast of the Sea of Cortez in Sonora, Mexico in a territory that spans approximately 100 km from just north of Kino Bay to just south of the Mexican town of Puerto Libertad. Their territory is approximately 211,000 ha in size, including the largest island in the Sea of Cortez, Tiburon Island. As of 2007, there were approximately 900 Seri people⁵ living in the two small coastal villages (Lewis 2009), *Socaaix* (Punta Chueca) and *Haxöl Iihom* (El Desemboque del Río San Ignacio) that serve as the primary places of residence for the Seri. They also occasionally reside in some of the small temporary fishing camps along the coast.

The Seri people were traditionally semi-nomadic hunter-gatherers and made use of an even larger area of rangeland than they currently have jurisdiction over, settling at temporary sites of residence according to the availability of natural resources, especially freshwater (Schindler 1981). They would set up temporary camps and construct structures from ocotillo branches and cover them in brush, seaweed, turtle carapaces or

⁵ This figure is higher than the 2000 census. It more closely reflects the opinions of Seri government officials (Marlett ms. 39, footnote 33).

whatever suitable material was available. These structures primarily served as windbreaks or were used as storage, while the large portion of daily life took place out of doors (Bowen and Moser 1995). These temporary camps would consist of anywhere from one nuclear family to fifteen families. They did not practice agriculture, even with the attempts made to change their modes of subsistence by colonial forces.

It is unclear exactly how long the Seri people have inhabited their traditional homeland, including the smaller area that they now call their territory (Bowen 1976, 1983). It is very likely that they have been living there for several hundred years, probably more (Bowen 1976). In fact, it has been speculated that the arrival of the Seri people predates that of the Uto-Aztecan people (Marlett ms. 36). The first recorded contact with the Spanish dates back to the early 16th century (Bowen 1983). At this point, there were at least six groups (sometimes referred to as bands) of Seri people (Moser 1963; Spicer 1962; Griffen 1961). The bands were the following: band I – *xiica hai iic coii*, also known as the Tepocas or Salineros who lived along the coast between Puerto Lobos and Punta Tepopa and somewhat inland, as well; band II – *xiica xnaii iic coii*, also known as the Tastioteños who lived on the coast between Guaymas and Kino Bay; band III – *Tahejöc comcaac*, also known as the Seris or Tiburones who lived on the northern most part of Tiburon Island; band IV – *heeno comcaac* who lived in the central valley of Tiburon Island; band V – *xnaa motat*, also known as the Upanguaymas or Guaymas who lived south of Guaymas; band VI – *xiica hast ano coii* who lived on San Esteban Island (Moser 1963; Sheridan 1996: 196). It has been said that these groups spoke three different dialects. These communication differences were thought to have kept the groups from having much social interaction with each other.

The Guaymas band, the band located furthest to the south, was assimilated in mission life not too long after the first contact with Europeans (Bowen and Moser 1995: 232). The Seri bands living on the islands and some of the coastal people continued to live an isolated life, with fairly little contact with Europeans until the 19th century. However, the Seri people that moved further inland continued to have contact with Europeans which led, in some cases, to violence. The Jesuits and Franciscans tried to missionize the inland Seri, but they were met with much resistance, leading to conflict on both sides (Bowen 1983; Griffen 1961). Eventually, the situation escalated and the Seris were met with genocide attempts by the Mexican government that nearly succeeded (Felger and Moser 1985: 12). In addition to conflicts with the Mexican government, the Seris were dealing with internal conflicts, a high infant mortality rate and disease (Sheridan 1979; Spicer 1962). According to Moser (1963), as of 1920, fewer than two hundred speakers of Seri remained. Domínguez (1962) indicates that according to the 1926 census there were only 140 Seri people.

Seri diet traditionally included sea turtle, shellfish, small land mammals, desert plants and seeds of eelgrass (*Zostera marina*) (Felger and Moser 1976; Felger, Moser and Moser 1980; Felger and Moser 1985). The Seri people also consumed the seeds of the eelgrass. In the springtime shoots break off the plants and they float to the surface of the ocean. The Seris would collect the shoots, dry them out in the sun and process the seeds into flour (Sheridan 1996: 193). They ate the fruit from all of the types of columnar cactus that exist in the territory. They would take the juice of the fruit and ferment it to make wine, which they still do today for the Seri new year celebration. They would also dry the seeds of the fruit to eat. They also ate pods from the mesquite tree, generally

processing it into a powder to be used in *haaztoj*, a porridge-like drink (Felger and Moser 1971). The heart of the century plant [*Agave subsimplex*] was another source of food for the Seri (Felger and Moser 1970). In the late winter they would cut out the heart of the century plant and roast it, resulting in a sweet treat.⁶

Although the Seri people maintained many aspects of their traditional way of life until at least the beginning of the 20th century, a shift in the Seri lifestyle began with the establishment of a fishing cooperative in *Haxöl Iihom* in 1938 (Felger and Moser 1985: 16). In the second half of the 20th century, the Seri people shifted to an even more sedentary way of life, especially as they came to rely more on the Mexican cash economy through fishing and the sale of their handicrafts. There has, however, been regular movement of people and families between the two Seri villages and the small camps that are located in between those two villages over the years. The other Seri village, *Socaaix*, which is about 45 miles south of *Haxöl Iihom*, is even newer than its neighbor to the north. *Socaaix* was settled in the 1960s by some Seri families who were interested in being closer to non-Seri people who live in the nearby Mexican town of Bahia de Kino (Kino Bay) or the city of Hermosillo (Marlett ms. 34). The motivation for settling *Socaaix* was primarily for economic reasons, to more readily have access to potential buyers of fish and handicrafts.

In less than one hundred years, the Seri people went from a population of around 200 to a population of around 900. There are many factors that have contributed to this increase in population, including the following: health care is much more accessible, most women deliver their children in a hospital in Hermosillo leading to a lower infant

⁶ More comprehensive information on Seri knowledge of plants and animals and also the traditional use of plants and animals can be found in the Seri ethnobotany (Felger and Moser 1985).

mortality rate, roads to and from the Seri villages have been further developed and maintained and many families have cars, which has facilitated the fishing industry and the sale of Seri arts and crafts, and clean water is available for purchase in the villages and running water is also available in the villages. Concrete block housing was provided by the Mexican government in the 1960s and 1970s (Bowen and Moser 1995: 233) and more recently in the early 2000s, the Seri villages became electrified (they had previously relied on generators or solar panels for electricity). The Seri people acquired their *ejido* or communal land via a presidential decree in 1970⁷ and have had more official autonomy as a result. There are schools in the Seri villages, where children can receive education up to the level of middle school and are taught by Seri teachers at the kindergarten and elementary levels (that is, at least, the case in El Desemboque as of very recently). Of course, the strength of the Seri people has been a constant aiding force in their survival.⁸

Of course, some newer challenges exist for the Seri people, their culture and their language. These challenges are presented in the accessibility to technology such as television, the use of the internet in local internet cafes and the use of cell phones. While on the one hand, access to technology, communication with the outside world and information that is available from external sources is a potentially very positive thing, there are also potential drawbacks to these aspects of modern technology that are now commonplace in the Seri villages. With the possible exception of cell phones, these technologies promote the use of Spanish and imbue aspects of Mexican culture in everyday Seri life.

⁷ The original decree from November 12, 1970 by President Gustavo Díaz Ordaz that was published in the *Diario Oficial* on November 28, 1970 can be found in the *Comisión de Desarrollo de la Tribu Seri* (1976).

⁸ This has also been noted and discussed by Marlett ms.

While education is currently more accessible than it has ever been to Seri people, the schools in the Seri villages are somewhat problematic in that they teach students primarily in Spanish, not in Seri and instruct them about Mexican history, not about Seri history. There is at least one school book that exists in the Seri language, but it uses a non-standard orthography that is very different from the current orthography used in the Seri-Spanish-English dictionary (Moser and Marlett 2005) or any other orthography that has been used before. Some of the content of this book is also questionable. However, recently there have been efforts made, independent of the government-run schools, to teach writing in Seri using the standard orthography.

A similar kind of commentary can be made about the roads leading to and from the Seri villages. While the roads have made it much easier for the Seri people to be mobile and to seek medical care, sell their arts and crafts and participate in the Mexican fishing industry, the roads have also made interaction with outsiders much more regular. This can be beneficial, as described above and for the general exchange of cultures, but at the same time it has likely already affected and will continue to affect the traditional Seri way of life.

2.2 The Seri language

The Seri language, or *cmiique iitom* ‘Seri language’ (lit. ‘what a Seri person speaks’), is considered to be a language isolate. It has been suggested that Seri is part of the putative Hokan stock, which includes the Pomo languages of California, the Yuman languages of Baja California and the southwestern United States and Tequistlatec or Oaxaca Chontal, among other languages. However, Seri’s status as part of the Hokan stock is very difficult

to prove definitively (Marlett 2007). As a result of the lack of evidence, some linguists have decided to not consider the Hokan hypothesis (Marlett 2008; Campbell 1997).

It is thought that there were three different distinct, but mutually intelligible dialects of Seri that were spoken by some of the six Seri bands, which were mentioned above. It is thought that the first dialect was spoken by bands I, II, III and IV and that this dialect is the primary ancestor of modern day Seri. Dialect 2 was spoken by band V, but it is currently extinct and there was very little data collected regarding this dialect. Dialect 3 is also extinct and was spoken by band VI. The third dialect was described as sounding musical, as if speakers were singing instead of speaking (Moser 1963). Presently, there is only one Seri dialect. Speakers sometimes make remarks regarding certain expressions being characteristic of particular bands, especially of band VI, but this does not happen very frequently.

The majority of the people living in Seri villages speak Seri on a daily basis, children and adults. The non-Seri people who live in the Seri villages, either living as spouses of Seri people or working as part of the fishing industry or as teachers, rarely speak Seri, but in some cases they have a fairly proficient passive ability in understanding the language. Children raised by parents, one of whom is a non-Seri, generally have higher proficiency in Spanish than in Seri.

Seri language is used in most parts of Seri daily life. Formal school (elementary and middle school, plus a few years of high school) is taught in Spanish. There are exceptions to this in cases where the teacher is a Seri speaker, in which case some parts of class will be given in Seri. Preparatory school (equivalent to the later years of high school in the United States) is only available to Seri people in the nearby towns of Puerto

Libertad or Kino. All instruction at the preparatory schools is in Spanish. Instruction at the traditional school is given in Seri, although the traditional school does not operate on a regular basis and its emphasis is on dance and song. Business with outsiders is also conducted in Spanish, for instance, in the context of selling fish to buyers and selling art and crafts to outsiders. Dealings with the Mexican government also all occur in Spanish. Sermons at the local apostolic churches are given, for the most part, in Seri, but some aspects of the church service occur in Spanish such as songs and sometimes parts of the sermon.

For a typological overview of the Seri language, see Chapter 4 and also Marlett (2005). Chapters 4 and 6 also provide some basic information about Seri grammar relevant to the data presented in subsequent chapters.

2.3 The Seri territory

The Seri territory is located within the Sonoran Desert vegetational region (Shreve 1951). The climate is arid and the temperature tends to be very hot, especially during the months of May-August, before the monsoon season. The landscape and vegetation vary throughout the Seri territory. Along the coast there are dunes, coves, bays of various shapes and islands easily reachable from the mainland. Just inland from the coast there are rocky desert mountains, some of which run parallel to the coastline. Further inland there are multiple *playas* (dry lakebeds) and also areas of dense vegetation, including, for example, areas filled with cardon cactus (*Pachycereus pringlei*), cholla cactus (*Opuntia bigelovii*), iodine bush (*Allenrolfea occidentalis*) or honey mesquite (*Prosopis glandulosa* var. *torreyana*). Along the coast, lagoons and inlets that change with the tide support vegetation like *mangle dulce* (*Maytenus phyllanthoides*) which tolerate seawater.

Marlett (ms. 36) indicates that many outsiders have called the Seri territory a “harsh” and unforgiving place. Freshwater resources are scarce and the temperatures can be very hot, especially for those who are not accustomed to the desert climate, but the Seri people do not seem to perceive of their territory as a harsh place. I agree with Marlett’s observation and concur that the Seri people see the place where they live as their home and nothing else. There are elders who have commented to me how life was much more difficult at certain times in the past and that they and their families lived through challenging times, sometimes with no food or water or with no adequate shelter during a storm. However, never have they described the place where they live as a harsh or unpleasant place. In fact, I have heard Seri people talk about how happy they are when they return from a trip to another part of the country or even another part of the world.

To preface the following sections, I conducted fieldwork in *Haxöl Iihom*. Consequently, much of the descriptions of the landscape that follow are specific to the area surrounding *Haxöl Iihom* and not necessarily to the area near *Socaaix*. However, it is not the case that the area near *Socaaix* is drastically different from that surrounding *Haxöl Iihom*.

2.3.1 Bodies of water

The Seri territory does not have any non-ephemeral bodies of fresh water, be it lakes, rivers or streams.⁹ There is, of course, the ocean and the estuaries, but these bodies of water do not provide drinking water, a precious commodity in the Seri territory. Before the accessibility to freshwater was facilitated by pipes to springs and desalination facilities, sources of freshwater included ephemeral streams, soaks, seeps, hand-dug wells

⁹ In fact, there are no perennial rivers between the Río Colorado and the Río Yaqui, which is a distance of around 500 miles) (Bowen 1969: 62).

and waterholes or areas where water collects after rain. It is likely the case that limited sources of freshwater could have been factor to bringing different Seri groups or bands together in times of scarcity, but it could have also caused strife between these groups (Sheridan 1996: 197).

The arroyo, or dry riverbed near to *Haxöl Iihom*, which in Spanish is called the Río San Ignacio, plays an important role for certain gathering activities and it can also serve as a landmark in route descriptions. The arroyo, which can be referred to using the general term for arroyo *hant ipzx* (lit. ‘where the land is chipped’) in Seri, is a favorite place to go and collect fruit from the cardon cactus when they are ripe (during the months of June and July). There are also many other plants that grow along the arroyo that are (or were traditionally) used for medicinal purposes.

Downshore from *Haxöl Iihom*, on the other side of *Pajqueeme* ‘Cerro Tepopa’ there is an estuary, sometimes called ‘Estero Sargento’ in Spanish. This estuary does not seem to have a placename in Seri that can be used to refer to the whole estuary, as for instance, ‘Estero Sargento’ does. Seri speakers can refer to it as *xtaasi*, using the general term for an estuary. A deep part of the estuary is called *Xtaasi Hapé*. The name of the fishing camp at the estuary is *Zaaj Cheel*. This estuary is high in salinity.¹⁰ The tidal patterns in the area make it such that the boundaries between the estuary and the land change quite drastically depending on the tide. There is another estuary further downshore from Sargento closer to *Socaaix*.

¹⁰ Although not a true estuary since there is no river that flows into the sea at these estuaries, they are called *esteros* in Spanish, and as such, I call them estuaries in English.

2.3.2 Landforms

The most prominent landform that one can see from *Haxöl Iihom* is most likely *Pajqueeme* ‘Cerro Tepopa’. It is a tall peak that stands at the tip of the bay downshore (ie, going south in the Sea of Cortez) from which *Haxöl Iihom* is located. If looking from the sea inland, there is a fairly prominent mountain range behind *Haxöl Iihom* that is headed by the mountain that is called *Hast Yaxaxoj* ‘Pelón Peak’. This mountain range is full of rocky mountains with pointy ridges and drainages that are carved into the sides of the mountains.

In addition to the many mountain ranges that exist inland from *Haxöl Iihom*, there are dunes that are located upshore (or going north along the Sea of Cortez) of *Haxöl Iihom* along the coast. These dunes are sandy and are similar to rolling hills and can be referred to as *hant quipcö* (lit. ‘land that is thick’) in Seri. Downshore, on the other side of the bay from the rolling dunes are dunes that have pronounced cliff-like sides that face the beach. These dunes appear to be somewhat red in color. They can also be referred to as *hant quipcö*.

Downshore from *Haxöl Iihom*, in the area west of Cerro Tepopa, there are at least two *playas* or dry lakebeds, which are referred to with the general landscape term *caail*. The dry lakebeds also have landscape names. The biggest dry lakebed in the Seri territory is named *Caail Aapa*, which in Spanish is called ‘Playa San Bartolo’ or ‘Playa Noriega’. It is located east of Punta Chueca and around 8 miles long and around 3 miles wide with large dunes forming its shoreline (Bowen 1969: 47). Of the dry lakebeds that are near Cerro Tepopa, one is bigger than the other one. The bigger one’s name is *Caail Caacoj*, which literally means ‘playa that is big’. Dry lakebeds were likely of great significance as

potential sources of fresh water. It has been claimed that in Seri oral tradition, that in earlier times after large amounts of rain the dry lakebeds would fill up with enough water to serve as sources of fresh water for up to several months (Bowen 1969: 63). Playas were likely visited during the rainy times to collect fresh water and to hunt wildlife that would also flock to the dry lakebed to drink. There are also areas of mesquite scrub around the margins of *Caail Aapa*, making it a spot that was likely visited to collect mesquite since it was an important food to the Seri (Felger and Moser 1985: 29).

There are various islands west of the Seri territory in the Sea of Cortez. The largest one is *Tahejöc* ‘Tiburón Island’ which is over 1200 square kilometers in size (Marlett ms. 35). This is the largest Mexican island and is considered to be the homeland of some of the Seri people (the families who are descendants of Tiburón island families). The Seri people also have a history with the island *Cofteecöl* ‘San Esteban Island’. This island is much smaller, but was also inhabited by Seri people, but not within the last century (Marlett ms. 35; Bowen 2000b). There are a few other smaller islands in the area such as *Hast Otiipa* ‘Patos Island’ and *Hastaacoj* ‘Turners Island’, but they have not been used as regular residences of the Seri people.

2.3.3 Geographic artifacts

Haxöl Iihom, as mentioned above, is the more northern Seri village of the two. The name of this village literally means ‘where there are multicolored clams’. Based on the explanations I have heard from some Seri people, the rocky dune-like mounds that exist in the bay near where the village is located are a good place to find clams, especially when the tide is lower and the rocky mounds are more accessible. I have also heard that

the original fishing village from the early 20th century was located further upshore from the current location of *Haxöl Iihom*.

Socaaix is the southernmost Seri village, located about 45 miles south of *Haxöl Iihom*. *Socaaix* is accessible via an approximately 16 mile dirt road that leads north from Kino Bay or from the dirt road that connects it to *Haxöl Iihom*. As was discussed above, *Socaaix* was more recently established than *Haxöl Iihom*.

There is a fourteen mile dirt road that leads to *Haxöl Iihom* from the highway (an extension of Calle 36 which was created in the 1970s) that connects the highway between Hermosillo and Kino Bay to Puerto Libertad. This road is generally in passable condition, but since it crosses the Río San Ignacio, it can be washed out fairly easily if there is a big storm. This road serves as a crucial link for the people of *Haxöl Iihom* to get to Puerto Libertad for groceries, gasoline, drinking water and the like, as well as to get to the highway to go to Hermosillo for business or other important matters.

The road that links *Socaaix* and *Haxöl Iihom* was created around the 1970s (Marlett ms. 34). It was the first direct link for vehicles traveling between *Socaaix* and *Haxöl Iihom*. It is a graded dirt road that is, at times, in fairly poor condition. After any large storms, parts of the road tend to get washed out. However, the alternative route to get from *Socaaix* to *Haxöl Iihom* or vice versa involves significantly more miles than traveling this road. It also serves as a link to the estuaries and some of the other more isolated parts of the territory.

2.3.4 Conclusions

The diverse landscape and vegetation found in the Seri territory and the Seri people's tradition of hunting and gathering within their large territory provide a rich setting in

which to conduct an ethnophysiological study. This transition from a semi-nomadic lifestyle to a more sedentary one happened within the last century. In addition, Mexican culture and Spanish language appear to be changing daily aspects of Seri life. Thus, children are increasingly exposed to Spanish and families rely on processed food from the stores in the village. Consequently, the younger generations are not acquiring the language and knowledge associated with the landscape since they are not experiencing the landscape the way the older generations of Seri people did.

3 Methodology and data collection

The data for this dissertation was collected from around 31 weeks of fieldwork (over various fieldtrips from 2004-2008) in El Desemboque del Río San Ignacio, Sonora, Mexico (in the municipality of Pitiquito).¹¹ I used a variety of methods to collect the data, including word elicitation, elicitation tasks, non-verbal stimuli in referential communication tasks, directed narratives and in-situ interviews. The various non-verbal stimuli and elicitation tasks that I used are listed in Table 1. The codes provided in the code column in Table 1 correspond with the code that occurs after a given example from that particular stimulus.¹²

Many of the non-verbal stimuli listed in Table 1 come from research that has stemmed from the Language and Cognition Group at the Max Planck Institute for Psycholinguistics. The stimuli were designed for eliciting data related to the typological study of the structure of locative event descriptions (BowPed), motion event descriptions (Motion Verb and Motionland), and spatial frames of reference (Men and Tree and Ball and Chair), among others. For the purpose of this work, I collected this data in order to investigate the grammar of spatial reference in Seri. The description presented in this work could be used for further comparative research in semantic typology.

¹¹ More information about the Seri territory and the Seri people can be found in Chapter 2.

¹² The information found after examples indicates the speaker and the source of the example (e.g., a stimulus code, name of a text, etc.).

Name of stimulus	Code	Kind of stimulus	Number of consultants from which data is collected
<i>Topological Relations Picture Series</i> (Bowerman and Pederson 1993)	BowPed	Line drawings	3
<i>Picture Series for Positional Verbs</i> (Ameka et al. 1999)	PSPV	Color photos	2
<i>Body Part Coloring Task</i> (Enfield 2006)	BP	Line drawings	5
<i>Motion Verb</i> (Levinson 2002)	MoVerb	Animated video clips	3
<i>Motionland</i> (Bohnmeyer 2002a)	Motionland	Animated video clips	3 x 2
<i>Shape Classifier Task</i> (Seifart 2005)	SCT	Wooden blocks and pictures	1 x 2
<i>Demonstrative Questionnaire</i> (Wilkins 1999)	Dem	Instructions for enactment of elicitation situations	4
<i>Men and Tree</i> (Danziger 1992)	M&T	Color photos	5 x 2
<i>Ball and Chair</i> (Bohnmeyer 2008a)	B&C	Color photos	5 x 2
<i>New Animals</i> (Bohnmeyer 2008b)	NA	Memory task	22
<i>Novel Objects - Tasks 1 and 2</i> (Bohnmeyer 2008c)	NovObj1, NovObj2	Novel objects and molding clay	5 x 2
<i>Tense-Mood-Aspect Questionnaire</i> (Dahl 1985)	TAM	Verbal stimuli which provide contexts and utterances to be translated within these contexts	3

Table 1. Stimuli used to collect data

These tasks involved different procedures, which are described here. Motionland, Shape Classifier Task, Men and Tree, Ball and Chair and the Novel Objects tasks are all referential communication tasks. All of these tasks are run with two native speaker

consultants at a time. One consultant assumes the role of director and the other assumes the role of matcher. The consultants sit side-by-side at a table with a board or sheet set up between them such that they cannot see each other or the table space in front of the other consultant. In the case of tasks of this type involving photos or objects, both the director and the matcher have the same set of photos or objects in front of them. The director chooses one of the photos or objects to describe to the matcher and the matcher chooses the photo or object they think the director is describing. In the case of the Novel Objects tasks, the director describes pieces of molding clay that are either on the novel object or located near the novel object. In the Motionland task, the director watches a video and describes it to the matcher. The videos involve a ball rolling in a landscape. The matcher has a laminated copy of a picture of the landscape in front of them and they are to draw the description the director provides of the path of the ball.

Some of the tasks are best classified as elicitation tasks that involve non-verbal stimuli. The following tasks involve line drawings or photographs that native speakers were asked to describe in a particular way: the Topological Relations Pictures Series and the Picture Series for Positional Verbs. For the Body Part Coloring Task speakers were asked to color and label the parts of human body which are illustrated in a line drawing. The Motion Verb task is a set of video clips involving moving objects, mainly a ball, and the native speaker consultant is asked to describe what happens in the video.

There are two other elicitation tasks that do not involve non-verbal stimuli. These tasks come in the form of questionnaires, namely, the Demonstrative Questionnaire and the Tense-Mood-Aspect Questionnaire. The Demonstrative Questionnaire provides scenarios to set up and describe to a native speaker consultant and then a few phrases to

elicit within the provided context in order to elicit demonstratives under varying contexts. The Tense-Mood-Aspect Questionnaire provides suggested utterances to elicit under the given contexts in order to collect data on tense, mood and aspect contrasts in the language being investigated.

There was one last type of task that can be called a memory task, namely the New Animals task. This is an updated version of the Animals in a Row task (Pederson et al. 1998), the aim of which is to better understand what frames of reference are preferred in non-linguistic tasks. In this case, speakers are asked to memorize an array of three plastic toy animals on a table. The animals are taken off of the table and the speaker is rotated 180° to another table where they are handed four plastic toy animals and are asked to make the array the same as it was on the first table.

In addition to collecting data that reflects aspects of the grammar of spatial reference in Seri, this work presents the way that Seri speakers categorize the landscape they live in. I began the process by making a list of landscape terms that were printed in precursors to what is now the Seri-Spanish-English dictionary (Moser and Marlett 2005). During subsequent fieldtrips I would ask people names of features in the landscape and add those to my list or add to the definition of terms I had already collected. However, in order to compile a database of landscape terms in discourse, I used a discovery procedure which involved the elicitation of situated route descriptions.

Situated route descriptions begin by first choosing a location to go to. This is discussed in advance with a native speaker consultant and we decide on a place. Some of the time we would decide on a place that has some cultural significance to the native speaker language consultant, but what is most important is that the place is one that the

native speaker is familiar with. After a place is decided upon, the native speaker and I would travel from the Seri village of El Desemboque to the chosen destination by car. Once at the location, I would ask the native speaker to provide a description of the route from where we are located back to village. I would tell the native speaker consultant to pretend as if they are describing the route to someone who speaks Seri, but who is not familiar with this part of the Seri territory, in order to increase the likelihood that the consultant uses terms which refer to landscape terms as opposed to placenames.

To probe the semantics of the route descriptions, a further method involves playing the previously recorded route descriptions back to a different native speaker language consultant and to have them show me on a map the route that is described. This verification task allows for further investigation into the extensions of landscape terms, as well as the semantics of the motion verbs and topological relators which are used in motion event descriptions. I conducted the route verification task with some of the route descriptions.

In addition to the collection of situated route descriptions, I also went out into the landscape and collected in-situ landscape diagrams with native speaker consultants. This type of task involved me accompanying a native speaker consultant to a place where we could see a landscape scene that was familiar to the native speaker consultant. Once we were there, the consultant would sketch the landscape scene or in cases where they felt uncomfortable sketching it, I would sketch it with their verbal input. From there, we would label the different parts of the landscape scene on the sketch. A few of the landscape diagrams are provided in subsequent chapters.

A further method used to collect data involving landscape terms in a natural discourse context is to collect personal narratives which feature the landscape as a central theme; for example stories about trips to the desert to gather food items or plants or animals used for the production of handicrafts or stories of fishing or getting lost at sea. These personal narratives not only provide additional linguistic data on how landscape terms occur in everyday speech, but they also provide additional insight into the significance of landscape objects in Seri culture. These types of personal narratives were elicited in a way such that I spoke with a native speaker before beginning the recording about their life and traditional practices of fishing, hunting, gathering or traveling that they have participated in. From there, we would decide on a topic and they would narrate a story from their life or about particular aspect of Seri culture.

As a means to understand the landscape domain in Seri better, I elicited lexical relations that exist between landscape terms (e.g., taxonomical (kind-of) and meronymical (part-of) relations) in Seri. In order to do that, I used direct elicitation based on elicitation frames. This method involved using linguistic frames to try to elicit the lexical relations of interest, beginning with examples from other semantic domains, e.g., ‘a banana is a kind of fruit’, ‘a hawk is a kind of bird’, ‘a pond is a kind of water body’. This results in an anomaly in cases where the subject is not a hyponym of the object, e.g., *?A mare is a kind of horse.*

An additional method that I used to collect data on the landscape domain in Seri is participant-observation of cultural practices, especially those that are associated with the landscape. This included going on foraging or gathering trips with Seri women, for example, to collect the fruit off of the cardon cactus in order to process it and ferment

resulting liquid to make wine for the Seri New Year's celebration, which is currently held the last day of June into the first day of July.¹³ In order to collect similar kinds of data with men, I conducted interviews with them after they returned from fishing trips and I would ask them to describe to me the route that they took from El Desemboque, for instance, to a particular reef where they were fishing. I would supplement their description by having them show me on a topographic map where they went. By conducting interviews with men about their fishing trips, it allowed me to have access to an activity that, as a woman, I am not allowed to participate in.

As opposed to work methods used by other researchers (e.g., Mark *et al.* 2003b, in press), I decided not to use photographs of landscape scenes as a tool to discovering labels for landscape categories due to their problematic nature. Photographs of a landscape scene can be an unfamiliar way for people to experience the landscape – the perspective of the photographer is to be assumed by the viewer of the photograph, which can be an unfamiliar practice to people not accustomed to taking and viewing photographs. Adding this layer of representation into the task can only complicate the data collected by using photographs as stimuli in a task, such as a pile-sort task. Additionally, certain problems can arise regarding the speaker's unfamiliarity of the location of where the photograph was taken (see Turk *et al.* in press for further discussion of this matter).

¹³ June is the last month of the Seri year. The name for June is *imam imam iizax* which literally means 'moon when the cactus fruit are ripe'. More about the Seri calendar is discussed in Felger and Moser 1985: 57-58.

4 Elements of Seri grammar and lexicon

This chapter provides background information on Seri grammar and lexicon relevant to the data discussed in subsequent chapters of this dissertation. The topics covered in this chapter include typological traits of the language, verb morphosyntax, nominal morphosyntax, parts of speech and lexicalization.

4.1 Typological profile

Seri is, for the most part, a head-final language (Marlett 2005: 54). This can be illustrated by the fact that main clauses follow dependent clauses; verbs follow their complements; adpositions are postpositions, i.e., follow their complements; possessed noun phrases follow possessor noun phrases; etc. Example (7) illustrates the order of main clause and dependent clause. Verb forms also follow their dependents, which is also illustrated in (7), where the arguments precede the verbs in both the dependent and main (or independent) clause.

(7) Dependent clause

<i>Caay</i>	<i>cap</i>		<i>yeen</i>		<i>cap</i>
horse	DEF.ART.SG.stand		3.POSS.face		DEF.ART.SG.stand
<i>i-po-cáat</i>			<i>x¹⁴</i> ,		
3;3-IRR.DEP-swing			UNSPEC.TIME		

Main clause

<i>anxō</i>	<i>ma</i>		<i>s-aai</i>		<i>haa</i>		<i>hi.</i>
much	2.DIR.OBJ		IRR-make		SBJ.NMLZ.be		DECL

‘That horse is going to injure you (lit. make you more) if it swings its head.’
(Marlett 2005: 55)

¹⁴ This particle seems to indicate that the event that the clause it occurs in describes occurs at some unspecified time. It occurs at the end of dependent clauses or in nominalized clauses (Moser and Marlett 2005: 576).

Example (8) illustrates that adpositions in Seri, such as *iti* ‘on it’, are postpositions, i.e., follow their complements.¹⁵ In this case, the complement is the noun phrase *hehe iti icoohitim com* ‘the table’.

- (8) *Ziix ano i-c-oosi quih hehe*
 thing 3.POSS.in 3.POSS-UNSPEC.SBJ-DETRANS.drink DEF.ART.SG.UNSPEC wood
i-ti i-c-oohitim com i-ti y-ijj.
 3.POSS-on 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS-on DP-sit
 ‘The cup is on the table.’ (AIM BowPed_1)

In example (9) the possessed noun phrase *iionam quih* ‘his hat’ follows the possessor noun phrase *hiti miiha quih* ‘my father’.

- (9) *I-ti h-miiha quih i-ionam*
 3.POSS-on 1.POSS-toward.OBL.NMLZ.move DEF.ART.SG.UNSPEC 3.POSS-hat
quih c-ooil iha.
 DEF.ART.SG.UNSPEC SBJ.NMLZ-grue DECL
 ‘My dad’s hat is green.’ (LE Possession)

A simple verb clause in Seri consists of one or more nominal phrases, which serve as the arguments of a verb, followed by a finite or a non-finite verb form and, in some cases, verb particles. This is illustrated in example (10) where the subject is the pronoun *he* ‘I’, the object is the nominal phrase *hayaa hacoxl cop* ‘store’ and both of these phrases are followed by the verb and its modal auxiliary *contisa caha* ‘will go’.

- (10) *He ha-yaa ha-coxl cop*
 1 SBJ.NMLZ-PASS.possess SBJ.NMLZ-PASS.guard DEF.ART.SG.stand
co-nt-isa caha.
 OBL-away-IRR.go AUX.DECL
 ‘I will go to the store (lit. that which is possessed is guarded).’ (OPT PathVerbs)

Sentence type is not determined by the inversion of constituents, as in English and many other Indo-European languages. As opposed to constituent order, interrogative utterances are characterized by the presence of either a prefix or a suffix. More

¹⁵ Although, in some cases, what appear to be postpositions are actually something closer to relational preverbs following Marlett (ms. 803-804).

specifically, the neutral realis prefix *t-* occurs on finite verb forms and the suffix *-ya* occurs after nominal forms used predicatively (such as a nominalized verb form) or with a modal auxiliary in the case of irrealis verb forms. In order for an utterance to be interpreted as a question, it is necessary to have either one of those interrogative affixes. Example (11) shows an interrogative that involves *t-* on the verb form *tmiih* ‘is it not located?’.

- (11) *¿Cmaax, ihmaa z i-ti t-m-iih?*
 now other INDEF.ART 3.POSS-on INTERR-NEG-be.LOC
 ‘Now, there is not another one? (AIM NovelObject_Localization_1)

Nominalizations are pervasive in Seri discourse. The head of a main clause predicate is often a nominalized verb form that is accompanied by a declarative marker, as in (9). In order to indicate that an utterance with a nominalized verb form is a question, the suffix *-ya* is used, as is illustrated in example (12) with the deverbal form *coomya* ‘is it lying?’.

For further discussion on nominalizations in Seri, see the discussion in section 4.3.

- (12) *¿Hant com i-ti c-oom-ya?*
 land DEF.ART.SG.lie 3.POSS-on SBJ.NMLZ-lie-INTERR
 ‘Is it [lying] on the ground?’ (MLA B&C 3-12)

There is further discussion of sentence type below in section 4.2.4.

The morphology that occurs in the verbal domain in Seri is somewhat complex. Almost all of the affixes that occur on verbs, both derivational and inflectional, are prefixes (Marlett 2005: 64). The verbal prefixes encode information such as person marking, mood and negation. The suffixes that occur on verbs indicate number of the subject or object argument or what has been referred to as aspect (see the discussion in 4.2.3 for more detail). Arguments are realized as bound pronominal agreement markers on the head, which in the third person may be coindexed with syntactically optional

nominal antecedents. This is illustrated in (13) where there is just one word comprising the utterance with no overt noun phrases and the pronominal agreement marker is coindexed with referents provided in previous discourse. Note that there is a portmanteau pronominal prefix *i-* when the subject and object of a transitive verb are both third person.

- (13) *I-y-aaihjö.*
 3;3-DP-make.red
 ‘S/he painted it red.’ (Marlett 2005: 57)

Seri exhibits many properties of a head-marking language (Marlett 2005: 62). Finite verbs are marked for person and number of the subject and direct object and for the person of the oblique when applicable. In example (14), both the dependent-marked verb form, *hatoom* ‘we were lying’, and the matrix verb form *cöhayaticpan* ‘we worked’, are marked for a first person plural subject.

- (14) *Hizaax oo co-m-pacta, hant quij i-ti*
 here PART OBL-RP-be land DEF.ART.SG.sit 3.POSS-on
ha-t-om ma x, cö-ha-y-aticpan hac.
 1.PL-REAL.DEP-lie DS UNSPEC.TIME OBL-1.PL-DP-work DEF.ART.SG.LOC
 ‘That is how it was, living in the world, when we worked there.’ (FMH Landscape 6/22/06)

In utterances involving transitive verbs, if both the subject and the object are third person, the prefix *i-* is used. This is illustrated in (13) above and with the verb form *imiyaj* ‘are able to’ in example (15).

- (15) *Hai m-quuin* *cop* *in-tooit* *xox*
 wind toward-SBJ.NMLZ.return DEF.ART.SG.stand toward-REAL.DEP.blow although
c-aticpan *xepe* *com* *i-ti* *c-aticpan*
 SBJ.NMLZ-work seawater DEF.ART.SG.lie 3.POSS-on SBJ.NMLZ-work
quih *c-haa* *com* *coi*,
 DEF.ART.SG.UNSPEC SBJ.NMLZ-be DEF.ART.SG.lie still
ica-ticpan *oo* *i-m-iyaj*.
 INF-work PART 3;3-RP-be.able
 ‘Although the wind (lit. wind that returns) blows [from the sea], the fishermen (lit. workers) that fish at sea are still able to work.’ (OPT Wind_HaiMquuin)¹⁶

Nominals are not marked for case. This can be seen in the above examples; for example in (8), where the two noun phrases are not marked for case, but the relationship between the two nominals is indicated by the verb, *yij* ‘is [sitting]’, the postposition, *iti* ‘on it’, and the order of the two noun phrases, with the subject coming first.

In noun phrases that express inalienable possession, the possessum (as head) is marked for person agreement with the possessor (as dependent). This is illustrated in (16) where the possessor is marked with *hi-* on the possessum *-nl* ‘hands’.

- (16) *Hi-nl* *quih* *qu-ihizlc* *iha*.
 1.POSS-hand.PL DEF.ART.SG.UNSPEC SBJ.NMLZ-dirty DECL
 ‘Our hands are dirty.’ (LE Possession)

Similarly, in postpositional phrases, the head, the postposition, agrees in person with its complement. This is illustrated with *iti* ‘on it’ in example (17) and *hiiqui* ‘toward me’ in example (18).

- (17) *Hax* *cop* *hant com* *i-ti* *himo*
 fresh.water DEF.ART.SG.stand land DEF.ART.SG.lie 3.POSS-on elsewhere
hyoozjc.
 1.DP.pile.up
 ‘I threw the water on the ground.’ (AIM CausedPositions)

- (18) *Francisca* *quih* *hi-iqui* *y-iin*.
 Francisca DEF.ART.SG.UNSPEC 1.POSS-toward DP-go
 ‘Francisca is coming (toward me).’ (AIM EnterExitVerbs)

¹⁶ Note that the verb *-aticpan* ‘work’ is a rare case in that it does not have a plural form.

There are, however, a few ways in which Seri exhibits characteristics of dependent-marking (Marlett 2005: 63). Dependent clauses are marked as such by specific verb morphology that only occurs in dependent clauses and not in independent clauses. This is illustrated with the sentence in (19), which contains a dependent clause and a main clause. The verb form in the dependent clause has the realis dependent prefix *t-*, whereas the verb in the main clause receives the distant past prefix *y-*.¹⁷

(19) **Dependent clause**

Hehe i-ti iquiicolim quiq toi
 wood 3.POSS-on OBL.NMLZ.ABS.POSS.sit.PL DEF.ART.SG.sit toward
t-ipac ma,
 REAL.DEP-back DS

Main clause

i-mocl hac ziix c-oqueht quiq
 3.POSS-below DEF.ART.SG.LOC thing SBJ.NMLZ-bounce DEF.ART.SG.sit
ano y-ij.
 3.POSS.in DP-sit

‘The chair is facing backwards and the ball (lit. thing that bounces) is below it.’
 (AIM B&C 1-2)

The distinction between dependent marking and independent marking is further illustrated in (20) where the verb forms in the dependent clauses are marked with *po-*, the irrealis dependent prefix, and the verb form in the main clause is marked with *si-*, the irrealis independent prefix.

(20) **Dependent clauses**

...taax ano m-po-ofp ta x, taax
 DEM 3.POSS.in 2-IRR.DEP-arrive DS UNSPEC.TIME DEM
i-ti po-ohca,
 3.POSS-on IRR.DEP-be.LOC

Main clause

taax ano n-si-ifp aha, Haxöl Iihom.
 DEM 3.POSS.in 2-IRR-arrive DECL.AUX El.Desemboque

‘...you will arrive there, there it will be, you will arrive there in El Desemboque.’
 (AIM 6/8/07_2)

¹⁷ For more discussion on the differences in verbal morphology of dependent and independent clauses, see section 4.2.

Seri shows characteristics of synthetic and agglutinative languages, rather than isolating languages. The verbal paradigms that exist in Seri are relatively large (Marlett 2005: 65). These different forms result from different verbal prefixes that combine with the different forms of verbal stems. Some of the different prefixes that can occur on inflected verb forms are shown in Table 2. Examples of the types of stem changes that can occur are shown in Table 3. Like agglutinative languages, the verbal prefixes are generally easy to segment, which is illustrated by the segmentation that is provided in the examples in this work; but at times there are exceptions to this. As such, Seri also exhibits some characteristics of a fusional language.

There are processes for creating denominal verbs in Seri (which are described in section 4.2), but there is no noun incorporation. In other words, noun roots do not combine with verb roots to form complex verb forms. After this discussion of basic typological traits, I now turn to a more detailed presentation of verb morphosyntax.

4.2 Basic verb morphosyntax

This section provides information regarding verb morphosyntax in Seri, where I introduce not only the mood system, but also the entire basic verbal tense/aspect/mood system. I focus on contrasts of realis-irrealis and dependent-independent since these seem to be the top-level contrasts of the Seri tense/aspect/mood system. Argument marking is discussed, as well, including the different ways that number and person are marked with prefixation and changes in the verb stem. A discussion on sentence type is presented in this section, as well as a brief description of derived verb forms.

4.2.1 Argument marking

Arguments are obligatorily marked by pronominal prefixes that precede the verb stem. The cross-reference markers that occur as prefixes and pronouns that mark person and number in Seri are illustrated in Table 2. Note that there is a special form to mark first person for imperative verb forms, which is the prefix *hpo-*, which only occurs with imperatives. Number marking is morphologically highly irregular. It is marked with a verbal prefix in the case of the first and second person subject and direct object cross-reference markers. However number of the subject is also indicated in the change in the form of the stem of the verb, as is illustrated for plural subject marking in Table 3. Note also that number is marked in imperatives with a stem change in the verb.

Person	Number	Subject	Direct Object	Spatial applicative ¹⁸
1	sg	<i>h-</i> , <i>ih-</i> (trans.) <i>hp-</i> , <i>ihp-</i> (intrans.)	<i>hpo-</i> (imperative) <i>him</i> , <i>hin</i>	<i>he</i>
	pl	<i>ha-</i>	<i>hizi</i>	
2	sg	<i>m-</i> , <i>im-</i> , <i>n-</i> , <i>in-</i>	<i>ma</i>	<i>me</i>
	pl	<i>ma-</i>	<i>mazi</i>	
3 ¹⁹	sg/pl	<i>i-</i>		<i>co-</i> , <i>cö-</i>

Table 2. Cross-reference markers in Seri

¹⁸ Marlett (ms. 595-598) calls this cross-reference marker the indirect/oblique object marker. I am calling it a spatial applicative in order to hopefully better capture the nature of this prefix. Although this prefix does not transitivize verbs, it does seem to act as a cross-reference marker for arguments that involve spatial reference such as goal, source and location, as well as metaphorical spatial reference, such as recipients and addressees. For ease of glossing, in the interlinear glosses this prefix is labeled OBL.

¹⁹ Third person is only overtly marked when the subject and object are both third person. This applies regardless of number.

Type of stem change	Singular stem	Plural verb stem	Gloss
completely different	<i>-afp</i>	<i>-azcam</i>	‘arrive’
different wrt. certain vowels and consonants	<i>-ziim</i>	<i>-zcoomt</i>	‘appreciate’
different wrt. presence or absence of a vowel	<i>-oos</i>	<i>-oosi</i>	‘sing’
different wrt. presence or absence of a string of segments	<i>-am</i>	<i>-amyoj</i>	‘swallow’
	<i>-oocp</i>	<i>-oocapoj</i>	‘emerge’

Table 3. Stem changes to mark plural subject (following Moser and Marlett 2005: 872)

Plural subject marking in the verb stem, as is illustrated in Table 3, is done in different ways. Sometimes the stem is replaced by a string of segments and results in a completely different stem, as is shown by the category “completely different”. Sometimes the stem change can be characterized by the presence or absence a single segment or the presence or absence of a string of segments.

There is an interaction between subject plural marking in the verb stem and what has been called aspect marking (Marlett ms. 572), which is also realized by a change in the verb stem (e.g., the contrast between perfective vs. imperfective stems for the verb stem *-afp* ‘arrive’ is as follows – singular subject: *-afp* vs. *-afapim*; plural subject: *-azcam* vs. *-azijcam*). Aspect marking is discussed in section 4.2.3.

Some verbs also undergo a stem change to indicate that an argument is plural, as is shown in (21) with the transitive verb *-atax* ‘go’ being marked for a singular subject and in (22) with *-alx* ‘go’ being marked for a plural subject.

- (21) *Ihp-yo-m-atax*.
 1-DP-NEG-go
 ‘I didn’t go.’ (Marlett ms. 599)

- (22) *Ha-yo-m-alx*.
1.PL-DP-NEG-go.PL
'We didn't go.' (Marlett ms. 599)

4.2.2 Mood

The distinction made with respect to mood in Seri is between irrealis and realis.

Utterances that contain verb forms with irrealis prefixes can refer to potential events in the future or events in the past that remain unrealized. Irrealis forms can also be used in narratives that describe past events, but where the speaker wishes to express uncertainty about the realization of the event that is described²⁰ or in the case where under subordination a description of a past event is negated (Marlett ms. 580). Verb forms that contain realis prefixes describe a wider array of types of events than those described by verb forms that contain irrealis prefixes, including, for instance, reference to habitual and generic events.

The only mood contrast expressed in dependent clauses is between irrealis and realis. Dependent clauses are clauses which cannot occur as main clauses and marked with distinct mood marking morphology; in other words, verbs that have dependent marking cannot appear on their own (Marlett ms. 104) or as the sole verb form of a complete sentence. Additionally, the different subject marker, which occurs in clauses to indicate that the following clause contains a different subject, only occurs at the end of dependent clauses. There are more options for mood and other types of marking in independent clauses, as is illustrated in Table 4, which shows the mood distinctions that can be expressed in independent and dependent clauses and the morphemes that express these categories.

²⁰ In this case, the modal (*i*)*ho* is used (Marlett ms. 580).

	Independent clauses		Dependent clauses
Irrealis	Unmarked	<i>si-</i> , <i>s-</i>	<i>po-</i> , <i>p-</i> , <i>si-</i> ²¹
	Subjunctive	<i>tm-</i>	
Realis	Proximal	<i>mi-</i> , <i>m-</i>	<i>t-</i>
	Distal	<i>yo-</i> , <i>y-</i>	
	Emphatic	<i>xo-</i> , <i>x-</i>	
	Neutral (only used for interrogatives or declarative negative sentences with modal <i>ho</i>)	<i>t-</i>	

Table 4. Mood categories in Seri

4.2.2.1 Irrealis

It is rare for verbs in independent clauses which are marked with the irrealis mood prefix to occur without any additional particles, such as modal particles which provide information regarding the speaker's attitude (Marlett ms. 579-580). The co-occurrence of irrealis verb forms and modal particles is illustrated by the irrealis verb form *isaasipl* 's/he will write them' and the declarative particle form *aha* in (23).

- (23) *Ha-p-aspoj* *i-iqui* *i-c-aaca* *pac*
 SBJ.NMLZ-PASS-write 3.POSS-toward 3.POSS-UNSPEC.SBJ-send some
i-s-aasipl *aha*.
 3;3-IRR-write.PL AUX.DECL
 'He will write some letters (lit., what is written with which one sends).'
 (AIM TAM 16)

The irrealis prefix *si-* can be used in dependent clauses, but only in purpose clauses and then only under certain contexts (see Marlett ms. 106, 114 for further discussion of such contexts). An example of the irrealis used in a dependent clause is provided in (24). This interpretation of this clause is that the addressee should get the boat ready for the speaker for the purpose of the speaker to set out to sea.

²¹ This is only used in purpose clauses that involve an auxiliary verb as well as a finite verb with this form (Marlett ms. 577)

- (24) *Canoaa zo h-ataahoj, ano hp-s-ij.*
 boat INDEF.ART IMP-make.ready.PL 3.POSS.in 1.SG-IRR-sit
 ‘Get a boat ready for me to go in!’ (Marlett ms. 114)

In other dependent clauses, irrealis verb forms are marked by *po-* or *p-*. These clauses may describe a potential event in the future or an event that is unrealized in the past (Marlett ms. 576). It seems that dependent realis forms occur with generic descriptions, as is illustrated by *mpocaaix* ‘you will put it’ in (25) and *mpiiij* ‘you will be (sitting)’ in (26).

- (25) *Ziix ano i-qu-eaacalca tiquij hast*
 thing 3.POSS.in 3.POSS-UNSPEC.SBJ-store.possessions DEM.MED.sit stone
zo ano m-po-caaix, ta x,
 INDEF.ART 3.POSS.in 2-IRR.DEP-put.hard.thing DS UNSPEC.TIME
si-izx caha.
 IRR-rip AUX.DECL
 ‘If you put a rock in that bag (lit., thing in which one stores possessions), it (lit., that) will break.’ (AIM TAM 79)

- (26) *Iipx An It, hizaax, i-ti m-p-ij x,*
 area.at.base.of.Prieto.Peak here 3.POSS-on 2-IRR.DEP-sit UNSPEC.TIME
Haxöl Iihom in-s-yaai pix.
 El.Desemboque 2-IRR-go.toward AUX.DOUBT
 ‘If you are at the base of Prieto Peak, you will go to El Desemboque (lit., where there are multicolored clams).’ (AIM 6/18/07_KinoNuevo)

The dependent irrealis can also be used in descriptions of hypothetical events which are embedded under a speech act verb. This is illustrated in (27) with *hapoolx* ‘we could go’.

- (27) *Ha-po-olx, xoque.*
 1PL-IRR-go.PL EMPH.UNSPEC.SBJ.say
 ‘I wish we could go!’ (Marlett ms. 576)

Another context under which the dependent irrealis form is used is in cases which exhibit subordination under a negated past event. This is illustrated with *ipal* ‘go with’ in (28).

- (28) *Him i-p-al, i-m-atax iha.*
 1.OBJ 3;3-IRR-accompany SBJ.NMLZ-NEG-go DECL
 ‘S/he didn’t go with me.’ (Marlett ms. 578)

The subjunctive irrealis prefix is used fairly irregularly in Seri (Marlett ms. 581). The uses of this prefix vary; but all of them are not interrogative and not negative. This fact is important since in independent clauses one of the ways to form interrogative utterances is with the neutral prefix *t-* and the negative prefix is *m-*, both of which together are homophonous with the subjunctive prefix *tm-*. One context under which this prefix is used is when a speaker wants to express a wish. This use of the subjunctive form is illustrated in (29).

- (29) *¡Mojet xah zo tom-haa!*
 big.horn.sheep -- INDEF.ART SUBJUNC-be
 ‘May it be a bighorn sheep! (Marlett ms. 581)

Additionally, the subjunctive form of a verb can be used if the speaker makes reference to an event which could have happened but did not, which is illustrated in (30).

- (30) *Im-po-ofp ta, tm-aticpan. Haptco y-aticpan.*
 2-IRR.DEP-arrive DS SUBJUNC-work already DP-work
 ‘S/he could have started working at the time of your arrival. [But in fact] S/he’s already working.’ (Marlett ms. 581)

Another use of the subjunctive is when a speaker is reluctantly providing permission for an event to happen or is indicating that something should happen. This is illustrated in (31).

- (31) *Hin n-tcm-apatjc is.*
 1.OBJ 2-SUBJUNC-untie of.course
 ‘Ok, you can untie me!’ (Marlett ms. 582)

Finally, a subjunctive verb form can be used in cases where the subject is first person plural and the interpretation involves a hortative reading. This is illustrated in (32).

- (32) *Ha-tcm-ocoozx, xah m-eeyo.*
 1.PL-SUBJUNC-steal.PL and? RP-say.PL
 ‘“Let’s rob,” they said.’ (Marlett ms. 582)

4.2.2.2 Realis independent

There are various morphemes that select for/require realis marking. These different morphemes are listed in Table 4 and include proximal realis, distal realis, emphatic realis and neutral realis.

The so-called proximal realis or recent past, according to Marlett (1981, ms.) describes events located in the past or events which are occurring (or states that hold) at the time of utterance. This prefix does not co-occur with the negative prefix or in interrogative sentences (Marlett 1981: 23). Example (33) illustrates the use of the proximal realis prefix in an utterance that describes a past event.

- (33) *Taax qu-ihehe c-aacoj quih hacx*
DEM SBJ.NMLZ-be.leader SBJ.NMLZ-big DEF.ART.SG.UNSPEC alone
i-m-amiihtaj.
3;3-RP-kill.PL
'They killed the king (lit., leader that is big).' (OPT TAM 57)

Examples (34) and (35) show how the proximal realis prefix is used in descriptions of events that are taking place at the time of utterance, as in (34), and of states that hold at the time of utterance, as in (35).

- (34) *Tiix siimet quih i-t-ahit, mos hacx*
DEM bread DEF.ART.SG.UNSPEC 3;3-REAL.DEP-eat so freshwater
i-miisi.
3;3-RP.drink
'He is eating bread and drinking water.' (OPT TAM 86)

- (35) ***Ihp-m-eejim, he cmaax aha.***
1-RP-old I now AUX.DECL
'I am old.' (Moser and Marlett 2005: 864)

The proximal realis prefix can also occur in clauses that refer to habitual action (both for past and present habits) (Marlett ms. 584). An example of an utterance describing a present habit is illustrated in (36).

- (36) *Siimet quih* *i-ictim* *quih* *h-m-caa.*
 bread DEF.ART.SG.UNSPEC 3.POSS-be.cut DEF.ART.SG.UNSPEC 1-RP-look.for
 ‘I look for a piece of bread [every day].’ (Marlett ms. 584)

The so-called distal realis or distant past form (Marlett 1981, ms.) is used in descriptions of events that took place in the past and events which took place longer ago than events that could be described with verb forms that contain the proximal realis prefix. Examples (37) and (38) illustrate how the distal realis prefix can be used in descriptions of events that took place in the past. However, as the following examples illustrate and as is indicated in Marlett (ms. 583), it is clear that this prefix and its proximal realis counterpart are not exclusively used for past time reference.

- (37) *Ha-p-aspoj* *i-iqui* *i-c-aaca* *z*
 SBJ.NMLZ-PASS-write 3.POSS-toward 3.POSS-UNSPEC.SBJ-send INDEF.ART
i-y-aaspoj.
 3;3-DP-write
 ‘He wrote a letter (lit. what is written with which one sends).’ (AIM TAM 14)

- (38) *Hant i-ti* *c-oofin* *tintica*
 land 3.POSS-on SBJ.NMLZ-happen DEM.MED.go
h-o-yacj *quih* *qu-ihehe*
 1.POSS-OBJ.NMLZ-have.sibling DEF.ART.SG.UNSPEC SBJ.NMLZ-be.leader
quij *cö-y-aticpan.*
 DEF.ART.SG.sit OBL-DP-work
 ‘Last year (lit. land/year that happened) my brother worked for the governor.’ (AIM TAM 26)

Example (39) features a verb with the distal realis prefix, *yaapl* ‘is cold’, in a description that makes reference to the present time.

- (39) *Hax* *c-actim* *tiix t-matj* *cö-yoojöc* *oo, xo*
 freshwater SBJ.NMLZ-be.cut DEM DEP.REAL-hot OBL-DP.contiually PART but
cmaax y-aapl.
 now DP-cold
 ‘The lake (lit. freshwater that is cut) is always hot, but today it’s cold.’ (AIM TAM 30a)

- (41) *Ziix c-oqueht quij hi-teepni hipcop*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit 1.POSS-front.tooth DEM.PROX.stand
i-t hant t-ahjiit ma, xo-jizi.
 3.POSS-on land REAL.DEF-fall DS EMPH-hurt
 ‘The ball (lit. thing that bounces) hit me on the tooth and it hurts.’
 (MLA Demonstratives 1)

This prefix can also provide emphasis of the meaning of the verb form it occurs with. This is illustrated in (42) where the emphatic prefix provides an interpretation that it is particularly cold in the house and in (43) where the emphatic prefix indicates that the king still hasn’t arrived and that is in some way emphasized as the king was expected to have already arrived by the time of the utterance.

- (42) *H-aaco quih an hac x-aapl.*
 ABS.POSS-house DEF.ART.SG.UNSPEC 3.POSS.area.of DEF.ART.SG.LOC EMPH-cold
 ‘It is cold inside of the house.’ (AIM DahlQ 61)

- (43) *Qu-ihehe c-aacoj quih coi*
 SBJ.NMLZ-be.leader SBJ.NMLZ-big DEF.ART.SG.UNSPEC still
xo-m-afp ipi.
 EMPH-NEG-arrive not.even
 ‘The king still hasn’t arrived.’ (AIM DahlQ 154)

4.2.2.3 Realis dependent

Realis utterances that are in dependent clauses occur with the *t-* prefix. Examples of dependent realis marked verb forms can be found in (14) with *hatom* ‘we were’, in (19) with *toii tipac* ‘it is facing backwards’, in (34) above with *itahit* ‘s/he eats it’ and in (40) above with *ihptiim* ‘I sleep’. Narrative structure in Seri typically involves sequences of dependent clauses or clause-chained structures (containing dependent marked verb forms) followed by an independent clause (containing an independent marked verb form). These clause chains can also contain the different subject marker *ma*, whose use is not

permitted in independent clauses. In order to illustrate such a structure, an excerpt from a narrative about the speaker’s father almost getting lost at sea is provided in (44).

- (44) *Hajhax hant taax ano t-oii ma, hai timoca*
 Tecomate land DEM.PL 3.POSS.in REAL.DEF.stand.PL DS wind DEM.MED.come
qui-no t-afp, ziix an i-ihca com
 3.PL.POSS-to REAL.DEP-arrive thing 3.POSS.area 3.POSS-be.loc DEF.ART.SG.lie
ano t-imoz ma, i-haapl isoj aa
 3.POSS.in REAL.DEP.turn.upside.down DS 3.POSS-cold true PART
z ano cö-itaai ha, taax ah aa itah ma
 UNSPEC.TIME 3.POSS.in OBL-?happen.at.same.time DECL for.that.reason
hax haxoj xah i-m-azcam coi-t-aai,
 almost shore and 3;3-arrive.PL OBL-?happen.at.same.time
ox m-ee.
 thus RP-say
 ‘When they arrived there on Tecomate, a strong wind blew, the boat in which they went turned over, it was a true winter (lit. when it is cold), for that reason, they had a lot of trouble arriving at the shore, it is said.’ (RHM Landscape 7/12/06)

In addition to providing an example of a narrative that involves many dependent clauses strung together, example (44) also contains multiple instances of the different subject marker *ma*. The different subject marker indicates that the clause that follows it will have a different subject from the one that it is part of.

4.2.3 Aspect

Marlett (ms. 613-615) indicates that Seri morphologically distinguishes between perfective and imperfective aspect. Perfective aspect is unmarked, whereas imperfective aspect is marked on the verb with a suffix or a stem change. Marlett (ms. 613-614) discusses the common occurrence of dynamic verbs with both imperfective and perfective stems, as illustrated with forms of the verb *-aafc* ‘pound’ in (45) (perfective) and (46) (imperfective).

(45) *José quih i-nol cop eenm*
 José DEF.ART.SG.UNSPEC 3.POSS-hand DEF.ART.SG.stand metal
i-c-áatj quih cö-i-m-áafc.
 3.POSS-UNSPEC.SBJ-pound DEF.ART.SG.UNSPEC OBL-3;3-RP-pound
 ‘José hit his finger with the hammer.’ (Marlett ms. 614)

(46) *Cmaam quij hast quij hehe com*
 woman DEF.ART.SG.sit stone DEF.ART.SG.sit wood DEF.ART.SG.lie
cö-i-m-áfajquim.
 OBL-3;3-RP-pound.IMPERF
 ‘The woman is pounding the stick with the stone.’ (Marlett ms. 614)

Marlett (ms. 614) also indicates that, even though it is rather uncommon, stative verbs can have imperfective verb stems, as is illustrated with the forms of *-iih* ‘be located’ in

(47) (perfective stem), and (48) (imperfective stem).

(47) *Hant i-ti hi-h-iih zo ziih ha-p-áhit z*
 land 3.POSS-on 1-?-be.LOC INDEF.ART thing SBJ.NMLZ-PASS-eat INDEF.ART
i-ti t-m-iih, ...
 3.POSS-on REAL.DEP-neg-be.LOC
 ‘There isn’t any food at my house, ...’ (Marlett ms. 614)

(48) *Hast com ano hp-t-iihtim, ...*
 stone DEF.ART.SG.lie 3.POSS.in 1-REAL.DEP-be.LOC.IMPERF
 ‘As I was going [living] in the hills, ...’ (Marlett ms. 614)

Marlett treats this as a viewpoint aspect contrast, and the examples (45)-(50) all bear this analysis out. However, in (51)-(54), there appears to be a peculiar correlation with telicity, in that verb forms heading telic verb phrases all have perfective stems, apparently regardless of viewpoint aspect, and verb forms heading atelic descriptions have imperfective stems, again apparently independently of viewpoint aspect. Atelic descriptions depict events or states that do not have an inherent terminal point and telic descriptions depict events that have terminal points (Van Valin and LaPolla 1997: 93). In terms of *Aktionsart* types (Vendler 1957), state and activity predicates describe atelic states of affairs and activity and accomplishment predicates describe telic states of

affairs. This pattern is unpredicted under the viewpoint aspect analysis and problematic for it. Future research will have to try to reconcile the distribution of the stems across these contexts.

The situation is further complicated by the fact that verb stems also change in order to mark plural subjects or direct objects, see the discussion in 4.2.1 for more details. With intransitive verbs such as the verb *-anaao* ‘meow’, if the subject is singular, the verb form is unmarked, as is illustrated in (49) with the form *yanaao* ‘it meows’.

- (49) *Ziix c-anaao quij i-ip cap*
 thing SBJ.NMLZ-meow DEF.ART.SG.sit 3.POSS-tail DEF.ART.SG.stand
i-t-afito ma, y-anaao.
 3;3-REAL.DEP-pull DS DP-meow
 ‘If one pulls a cat’s (lit. thing that meows) tail, it will meow.’ (AIM DahlQ 75)

If the subject is plural, the verb stem changes by adding a string of segments to the end, as is illustrated in (50) with the form *canaaotaj* ‘that meow’, but the verb form is still unmarked for telicity.

- (50) *Xiica c-anaaotaj coi c-anaaotaj iha.*
 thing.PL SBJ.NMLZ-meow.PL DEF.ART.PL SBJ.NMLZ-meow.PL DECL
 ‘Cats (lit. things that meow) meow.’ (AIM DahlQ 73)

The telicity contrast is further illustrated with examples involving the verb *-aaspoj* ‘write’²² in (51) and (52). The differences in these examples are that in (51) the direct object noun phrase is singular, whereas in (52) the noun phrase is plural (both are indefinite) and correspondingly the two verb stems differ in telicity, (51) being telic and (52) being atelic. Following Dowty (1979), definite noun phrases are associated with telic interpretations of sentences, whereas indefinite noun phrases or mass nouns are associated with atelic interpretations of sentences.

²² This verb also means ‘paint’ and ‘photograph’. It is a causative verb that can be used transitively or intransitively. In the examples provided in this section, it is used transitively.

(51) *Ha-p-aspoj* *i-iqui* *i-c-aaca* *zo*
 SBJ.NMLZ-PASS-write 3.POSS-toward 3.POSS-UNSPEC.SBJ-send INDEF.ART
c-aaspoj *iha.*
 SBJ.NMLZ-write DECL
 ‘He is writing a letter (lit. what was written which one sends).’ (AIM DahlQ 6)

(52) *Ha-p-aspoj* *i-iqui* *i-c-aaca* *pac*²³
 SBJ.NMLZ-PASS-write 3.POSS-toward 3.POSS-UNSPEC.SBJ-send some
c-aasipl *ih.*
 SBJ.NMLZ-write.IMPERF DECL
 ‘He is writing letters (lit. what was written which one sends).’
 (AIM DahlQ 5)

A similar contrast is shown with (53) and (54). These two examples illustrate that the same contrasts apply to descriptions of events that occurred in the past. The examples below were elicited under the context that the speaker was answering the question, which was also elicited in Seri, meaning ‘When you visited your brother yesterday, what did he do after you ate?’.

(53) *Ha-p-aspoj* *i-iqui* *i-c-aaca* *z*
 SBJ.NMLZ-PASS-write 3.POSS-toward 3.POSS-UNSPEC.SBJ-send INDEF.ART
i-y-aaspoj.
 3;3-DP-write
 ‘He wrote a letter (lit. what was written which one sends).’ (AIM DahlQ 14)

(54) *Ha-p-aspoj* *i-iqui* *i-c-aaca* *pac*
 SBJ.NMLZ-PASS-write 3.POSS-toward 3.POSS-UNSPEC.SBJ-send some
i-y-aasipl.
 3;3-DP-write.IMPERF
 ‘He wrote letters (lit. what was written which one sends).’ (AIM DahlQ 13)

The same alignment between semantic and morphological contrasts occurs in the irrealis as well.

This brief discussion of what has most recently been labeled “aspect” in Seri reveals that this area of the Seri grammar warrants further exploration. At this point it is not definitively clear if this distinction is actually one of telicity, as opposed to aspect.

²³ Note that the indefinite plural article *pac* is “used with plural count nouns to indicate an indefinite number of entities” (Marlett ms. 770).

example of an imperative utterance is provided in (58). For further discussion of imperatives in Seri see Marlett (ms. 626-628).

- (58) *C-atax, c-atax!*
 IMPER-go IMPER-go
 ‘Go, go!’ (OPT PathVerbs)

4.2.5 Derived verb forms

Verbs can be derived from inalienably possessed nouns by adding the prefix *i-* to a nominal stem. An example of this is provided in (59) with *mitéemosoj* ‘have beards’, which is derived from the inalienably possessed noun *-teems* ‘beard’. This is further illustrated in example (60) with the noun *-taamt* ‘shoe’, where the the subject nominalizer prefix *qu-* is added. The interpretation of such denominal verb forms is to have or to wear X, where X is the referent of the inalienably possessed nominal.

- (59) *M-izil xo, m-i-téemosoj — t-eeyo yoque.*
 RP-small.PL but RP-VBLZ-beard.PL REAL.DEP-say DP.say
 ‘They are small but they have beards,’ they said, it is said.’ (Moser and Marlett 2005: 539)

- (60) *Ha-taamt com comcaii quih*
 ABS.POSS-shoe DEF.ART.SG.lie elderly.woman DEF.ART.SG.UNSPEC
qu-i-taamt iha.
 SBJ.NMLZ-VBLZ-shoe DECL
 ‘The woman has the shoe on.’ (RHF BowPed 21)

Such derived verb forms played a role in responses to the BowPed referential communication task, the results of which are discussed in more detail in Chapter 5.

4.3 Basic noun morphosyntax

This section looks at morphosyntax in the nominal domain of Seri. In particular, it presents the types of nominal expressions in Seri, including a discussion of derived nominals and the role they play in complex nominal expressions, which are pervasive in

the nominal lexicon. Number and possessive marking, as well as determination are also discussed. For a more detailed presentation of the determiner system in Seri, see Chapter 6.

4.3.1 Types of nominal expressions

The inflectional morphology that occurs in the nominal domain is relatively simple (Marlett 2005: 63). This pertains to simple nouns, as complex nominal expressions involve additional morphology. As for the simple nouns, there are different subclasses of these in Seri based on the morphology that they can take. All nouns or nominal expressions can, and usually are, followed by an article as part of a noun phrase. However, the subclasses of nouns differ in their availability to co-occur with the possessive prefix and the absolutive²⁴ prefix. This is illustrated in Table 5.

	Can they take a possessive prefix?	Can they occur with the absolutive prefix?
non-derived and unpossessed noun	no	no
inalienably possessed noun	yes	yes
kinship term	yes	yes
subject nominalization	no	no
object nominalization	yes	no
action or oblique nominalization	yes	no

Table 5. Subclasses of nouns (adapted from Moser and Marlett 2005: 829)

As indicated in Table 5, possessive prefixes cannot occur with non-derived and unpossessed nouns or with subject nominalized verb forms. In order to express that the referents of these types of nouns are possessed, speakers use a form of the verb *-yaa* ‘possess’. Inalienably possessed nouns include body part terms, some words for personal

²⁴ The absolutive prefix permits the unpossessed use of otherwise inalienable nouns.

possessions, as well as spatial relational nouns. Note that based on these distinctions inalienably possessed nouns and kinship terms do not differ. However, these two subclasses differ in that they take different possessive, as illustrated in Table 6.

	with kinship terms	with other inalienable nouns
1 singular	<i>hi-</i>	<i>hi-, ha-, hati-</i>
2 singular	<i>ma-</i>	<i>mi-, ma-</i>
3 singular		<i>i-</i>
unspecified		<i>qui-</i>
absolute	<i>hape-</i> (before a vowel) <i>ha-</i> (before a consonant)	<i>ha-</i>

Table 6. Possessive prefixes (adapted from Moser and Marlett 2005: 830)

For a more detailed discussion of possession in Seri, see section 4.3.3.

The morphological realization of nominal plural marking is fairly irregular and for the most part unpredictable in Seri, but frequently involves a stem change or the addition of a suffix to the noun stem (*-oj* for nouns that end in a consonant and *-j* for nouns that end in a vowel). The list of nouns provided in (61) illustrates the variation that exists in plural forms of Seri nouns.

(61) Examples of plural nouns:

- i) *hast* ‘rock’ > *hasatoj* ‘rocks’
- ii) *ctam* ‘man’ > *ctamcö* ‘men’
- iii) *cmiique* ‘person’ > *comcaac* ‘people’
- iv) *atcz* ‘her younger sister’ > *atcal* ‘her younger sisters’ > *atcalcoj* ‘their younger sisters’

In general if a noun has a plural form it generally means that it is a count noun and correspondingly the lack of a plural form correlates with it being a mass noun (Marlett ms. 437). Marlett indicates that some of the properties which are typical of count nouns but not of mass nouns are the following: they may be pluralized; they may occur with a number modifier to indicate the number of referents; they may occur with the

singular indefinite article *zo*; they may occur with a posture-based definite singular article²⁵; and they may occur with the verb *-aazi* ‘carry’, but not with *-oon* ‘carry [plural items]’, due to the selectional restrictions of this verb on its subject, as it conjugates as *-oon* only when the subject noun phrase refers to plural items, as opposed to a singular item. Example (62) shows how the plural form of *-xz* ‘dog’, *-xaca* ‘dogs’, is used in combination with a quantifier or numeral modifier (a verbal expression which indicates the number of referents).

- (62) *Ha-xaca* *quih* *t-atxo* *hi.*
 ABS.POSS-dog.PL DEF.ART.SG.UNSPEC REAL.DEP-many DECL
 ‘There are many dogs.’ (Moser and Marlett 2005: 839)

Marlett (ms. 437-438) observes that two classes of mass nouns can be distinguished in Seri in terms of their ability to occur with plural definite article *coi*. Mass nouns that describe granular substances, such as *hamt* ‘sand’, occur with *coi*, whereas nominals that describe substances that have no “atomic” (i.e., smallest) parts (at least not macroscopically), such as *hax* ‘freshwater’, do not occur with this article. For additional discussion on this topic, see Chapter 6.

With respect to count nouns, (Moser and Marlett 2005) there are certain contexts in which a noun unmarked for number has a plural interpretation:

- (63) *Haa* *hi-m-azcam* *quih* *zaah* *quih*
 there 1.PL-NEG-arrive.PL DEF.ART.SG.UNSPEC day DEF.ART.SG.UNSPEC
mi-itxo.
 RP-many
 ‘We didn’t arrive there for many days.’ (Marlett and Moser 2005: 839)

²⁵ Mass nouns can occur with posture-based definite singular articles. In such cases, they can occur with coerced count noun readings. These types of coercion effects play an important role in the interpretation of complex landscape terms and, as such, are discussed in more detail in Chapter 7.

- (64) *Moxima ha-aco cop ano*
 yesterday ABS.POSS-house DEF.ART.SG.stand 3.POSS.in
hp-t-aafp ma, haco ha-p-aspoj i-iqui
 1-REAL.DEP-arrive DS already SBJ.NMLZ-PASS-write 3.POSS-toward
i-c-aaca quih c-oocj
 3.POSS-UNSPEC.SBJ-send DEF.ART.SG.UNSPEC SBJ.NMLZ-two
i-t-aasipl ma, toc m-oi.
 3;3-REAL.DEP-write.PL DS there RP-be.LOC.PL
 ‘When I arrived home yesterday he had written two letters (lit. what was written
 which one sends).’ (AIM TAM 140)

I speculate that in cases involving quantifiers, as in (63), and number modifiers as in (64), the use of a plural nominal form is redundant and consequently optional. This is likely of particular relevance to complex nominal expressions such as *hapaspoj iiqui icaaca quih* ‘the letter’, as pluralizing such expressions requires changes in various parts of the expression. In other words, in complex nominal expressions, number is morphologically less complex to mark in the determiner than in the expression itself. Pluralization of the complex expression can entail the change in nominal forms and the change of a verb stem to indicate plural number, leading to a completely different expression.

According to Marlett (ms. 427), non-derived and unpossessed simplex nouns in Seri are generally used to refer to items found in nature, such as plants, animals, and celestial bodies. Examples of common nouns include *hai* ‘wind’, *cootaj* ‘ant’, *haxoj* ‘shore’, *conee* ‘grass’ (of any type), and *hapaj* ‘octopus’. However, within the class of concepts that are expressed, for instance, in English by noun roots, many of these are described by complex nominal expressions in Seri. These complex terms frequently involve deverbal forms, such as nominalizations, and are pervasive in the language. They play an important role in terms used to refer to landscape objects, as is discussed in Chapter 7. In fact, deverbal forms are commonly used, for instance, to refer to items that

are invented or new to the culture and to replace certain lexical items as the result of an avoidance taboo (Marlett ms. 428).

Some examples of complex nominal expressions are listed below (following Marlett ms. 465-474). The first expression given in (66 i) illustrates a compound of two nouns. The next expression in (66 ii) provides an example of a relational noun and the noun that is cross-referenced as its possessor nominal. In (66 iii), a noun is modified by a postpositional phrase headed by *iti* ‘on it’. Examples (66 iv-vi) feature complex nominal expressions involving a noun plus a nominalized verb form,²⁶ which in this case happen to all be subject nominalized forms. Finally, example (66 vii) shows a noun modified by a postpositional phrase that contains an oblique nominalized verb form.

(65) Complex nominal expressions:

- i) *hehe zamij*
wood palm.tree
‘box’ (lit. ‘wood palm tree’)
- ii) *hehe an*
wood 3.POSS.area.of
‘desert’ (lit. ‘wood area of’)
- iii) *caail i-ti siml*
dry.lakebed 3.POSS-on barrel.cactus
‘Emory’s barrel cactus’ (lit. ‘barrel cactus on the dry lakebed’)
- iv) *ziix qu-iisax*
thing SBJ.NMLZ-have.life
‘person’ (lit. ‘thing that has life’)
- v) *ziix c-oqueht*
thing SBJ.NMLZ-bounce
‘ball’ (lit. ‘thing that bounces’)
- vi) *hanzajipj qu-iipa*
pan SBJ.NMLZ-have.tail
‘frying pan’ (lit. ‘pan that has a tail’)
- vii) *hehe i-ti i-c-oohitim*
wood 3.POSS-on 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL
‘table’ (lit. ‘wood on which one eats’)

²⁶ The nominalized verb forms here function similar to that of a non-finite relative clause in English.

This list of examples is not exhaustive regarding the types of complex nominal expressions that occur in Seri. In fact, complex nominal expressions, as mentioned earlier, play an important role as expressions used to refer to landscape objects. For further discussion on the semantics of complex nominal expressions in the landscape domain, see Chapter 7.

A significant portion of the Seri nominal lexicon is comprised of deverbal nouns, including nominalizations (Marlett 1981) which are created by adding a nominalizer prefix to the verb stem. Different types of nominalizations are marked by different prefixes;— the paradigm of nominalizing prefixes distinguishes subject nominalizations, object nominalizations and oblique nominalizations. The prefixes reflect the thematic role assigned to the nominal head by the verb base or the syntactic function the argument corresponding to the head would have in finite clauses projected from the verb base. These deverbal forms seem to syntactically behave in a very similar manner to relative participles in languages such as Turkish or Telugu.

When nominalized verb forms are used predicatively in non-interrogative contexts, a declarative marker is required. The declarative marker appears as *iha* when the previous word ends in a consonant and as *ha* when the previous word ends in a vowel. Some examples of utterances involving predicatively used nominalizations can be found in (50) with *canaaotaj* ‘that which meows’, in (51) with *caaspoj* ‘one who writes’, in (52) with *caasipl* ‘one who writes’ and in (59) with *quitaamt* ‘one who has shoes on’.

As mentioned earlier, there is no case marking or gender marking in Seri. Argument marking is realized by verbal prefixes, as per the discussion in section 4.2. Although there is no gender marking in Seri, it has been suggested that there is a noun

class system developing based on the semantics of the rich determiner system in Seri (Marlett ms. 449; Marlett and Moser 1994). For further discussion on the determiner system in Seri see 4.3.2 for some of the grammatical aspects of the determiner system and Chapter 6 which focuses on the semantics of the determiners.

4.3.2 Determination

Most noun phrases in Seri end with a determiner. The class of determiners includes such items as indefinite articles, definite articles and demonstratives that are used attributively. This section presents some of the formal properties of determiners in Seri. The semantics of the determiner system is discussed in Chapter 6.

Indefinite articles in Seri include the singular form *zo*, which is mostly used with singular count nouns, and the plural form *pac*, which is only used with plural count nouns and with mass nouns. The singular form is illustrated in (66) with *ziix zo* ‘something’ (lit. ‘a thing’) and in (67) with *cmaam zo* ‘a woman’. The plural indefinite article occurs in the utterance in (68) as part of the noun phrase *hehe iicloj pac* ‘some pieces of wood’.

(66) *Gabriel hehe com ziix zo co-c-nip iha.*
 Gabriel wood DEF.ART.SG.lie thing INDEF.ART OBL-SBJ.NMLZ-poke DECL
 ‘Gabriel pokes something with a stick.’ (GHF BowPed Elicitation)

(67) *Cmaam zo y-oofp. María m-p-ah.*
 woman INDEF.ART DP-arrive Maria RP-PASS-call
 ‘A woman arrived. Her name is María.’ (Marlett ms. 769)

(68) *Hehe i-icloj pac ano y-aii...*
 wood 3.POSS-cut.PL some 3.POSS.in DP-be.LOC
 ‘Some pieces of wood that are there...’ (AIM MAndT 1)

The indefinite article *zo* is likely derived from the numeral *tazo* ‘one’, which is likely derived from the verb *-azoj* ‘alone’ (Marlett ms. 768). *Zo* has an allomorph *z* that occurs when it precedes vowels. This is illustrated in (69) by *ziix z* ‘something’.

- (69) *Ziix* z *i-yóohit*.
 thing INDEF.ART 3;3-DP.eat
 ‘S/he ate something.’ (Marlett ms. 769)

Definite articles and demonstratives in Seri are derived from subject nominalized forms of posture verbs and motion verbs. For instance, the definite article *quij* is derived from the subject nominalized verb form *quij* ‘that which is sitting’. The set of determiners in Seri, excluding the indefinite articles, is illustrated in Table 7.

property of referent classified by the verb root	definite article singular	definite article plural	proximal demonstrative	medial demonstrative	distal demonstrative
‘standing’ (support at end of dominant vertical axis)	<i>cop/cap</i>	<i>coyolca</i>	<i>hipcop, hizcop</i> [liquid]	<i>ticop, tacop</i> [liquid]	<i>himcop</i>
			<i>hizcoyolca</i>	<i>tacoyolca</i>	<i>himcoyolca</i>
‘sitting’ (support at end of non-dominant vertical axis)	<i>quij</i>	<i>coxalca</i>	<i>hipquij</i>	<i>tiquij</i>	<i>himquij</i>
			<i>hizcoxalca</i>	<i>tacoxalca</i>	<i>himcoxalca</i>
‘lying’ (support along dominant vertical axis)	<i>com</i>	<i>coitoj</i>	<i>hipcom</i>	<i>ticom, tacom</i> [group]	<i>himcom</i>
			<i>hizcoitoj, hizcom</i> [group]	<i>tacoitoj</i>	<i>himcoitoj</i>
unspecified	<i>quih, cah</i> [focus]	<i>coi</i>	<i>hizquih</i>	<i>taquih, tiquihtim</i> [movement]	<i>himquihtim</i>
			<i>hizcoi</i>	<i>tacoi</i>	<i>himcoi</i>
flexible material			<i>hipquih</i>	<i>tiquih, ticah</i> [focus]	<i>himquih</i>
			<i>hizquihtolca</i>	<i>taquihtolca</i>	<i>himquihtolca</i>
referent is a place	<i>hac</i>		<i>hizac</i>	<i>tahac</i>	<i>himcac</i>
				<i>tacahjoj</i>	<i>himcahjoj</i>
moving toward a goal			<i>hipmoca</i>	<i>timoca</i>	<i>himmoca</i>
			<i>hizmocat</i>	<i>tamocat</i>	<i>himmocat</i>
moving away from a source			<i>hipintica</i>	<i>tintica</i>	<i>himintica</i>
			<i>hipinticat</i>	<i>tanticat</i>	<i>himinticat</i>

Table 7. Definite articles and demonstrative adjectives (based on Moser and Marlett 2005: 843)

In general, singular noun phrases occur with singular determiners; however, there are exceptions (see Marlett ms. 776 for further discussion on this topic). The plural definite article *coi* is the article that is most commonly used with plural nouns, but there are also plural forms for the articles derived from posture and motion verb forms; however, these are less commonly used.

Some of the determiners that are categorized as demonstratives in Table 7 seem to have non-exophoric or textual uses, on which they function as alternatives to the definite articles. This is the case with *tintica* and *timoca*. An example of *timoca* being used instead of a definite article is provided in (70), where it occurs as part of the figure phrase, *ziix coqueht timoca* ‘the ball’.

- (70) *Ziix c-oqueht timoca hant c-noohcö*
 thing SBJ.NMLZ-bounce DEM.MED.come land SBJ.NMLZ-concave
quih i-teel com i-ti hant
 DEF.ART.SG.UNSPEC 3.POSS-edge DEF.ART.SG.lie 3.POSS-on land
c-maasij i-iqui y-iin.
 SBJ.NMLZ-roll 3.POSS-toward DP-go
 ‘The ball (lit. thing that bounces) came rolling to the edge of the hole in the ground
 (lit. land that is concave).’ (AIM MoVerb Paths 9)

The semantics and pragmatics of the proximal-medial-distal distinction is discussed in Chapter 5 in the section on spatial deixis.

4.3.3 Adnominal possessive constructions

As was mentioned above, Seri distinguishes morphosyntactically between alienable and inalienable possession. The main difference is that inalienably possessed nouns obligatorily participate in adnominal possession (via prefixation), but are optional and very rare with alienable nouns, where possession is otherwise expressed predicatively.²⁷

²⁷ Note also that the kinship terms take slightly different agreement/cross-reference markers than other inalienably possessed nouns.

Inalienably possessed nouns include the following: kinship terms, body and object part terms (e.g., *-nol* ‘arm/hand’), spatial relational nouns, some terms that refer to personal possessions (including some artifacts) and some terms that refer to domestic animals (including articles of clothing and *-xz* ‘dog’ or ‘pet’). Some common nouns seem to be able to take the possessive prefix, but unlike the inalienably possessed noun, they do not require such prefixes (e.g., *tom* ‘money’ vs. *itom* ‘his money’).

Examples (71) and (72) illustrate adnominally possessed body part terms. The possessive marker has pronominal force just like the verbal agreement markers, so noun phrases describing the possessor are syntactically optional, as is shown in (71) with *inol* ‘its arm’. When they are present, they precede the possessed nominal, as illustrated in (72) with *cocazni com ilit quij* ‘the snake’s head’. In (71), the inalienably possessed nominal *-ti* ‘on’ also occurs, indicating the spatial relation that holds between the ring and the finger, namely, that of the ring being on the finger.

(71) *Ha-nol* *ha-caaix* *tiix* *i-nol*
 ABS.POSS-arm SBJ.NMLZ-put.PASS DEM 3.POSS-arm
cap *i-ti* *y-ijj.*
 DEF.ART.SG.stand 3.POSS-on DP-sit
 ‘The ring (lit., that which is put on an arm/hand) is on his/her finger (lit. arm).’
 (AIM BowPed 10)

(72) *Cocazni com* *i-lit* *quij* *c-actim* *iha.*
 snake DEF.ART.SG.lie 3.POSS-head DEF.ART.SG.sit SBJ.NMLZ-cut DECL
 ‘The head of the snake was cut.’ (Moser and Marlett 2005: 833)

As already mentioned, some inalienably possessed nouns refer to personal belongings, such as clothing. Some examples of such nouns are provided in (73) and (74). These nominals require a possessive prefix.

(73) *Siip* *cop* *i-ionam* *quij* *i-y-áaihjö.*
 boy DEF.ART.SG.stand 3.POSS-hat DEF.ART.SG.sit 3;3-DP-paint
 ‘The fellow (lit. standing boy) painted his hat [red].’ (Moser and Marlett 2005: 56)

- (74) **Hi-pnáail** *qu-ihízlc* *quih* *hihs cösmaco*
 1.POSS-skirt SBJ.NMLZ-dirty DEF.ART.SG.UNSPEC OBL.NMLZ.be.ashamed
caha.
 AUX.DECL
 ‘I will be ashamed of my dirty skirt.’ (Moser and Marlett 2005: 192)

In terms of the inalienably possessed nouns that denote spatial relations in Seri, there are two different sets of spatial relational nouns, both of which combine with the possessive prefixes. One set tends to have strong prosodic stress and marks oblique grammatical relations. The other type does not have strong prosodic stress and generally occurs as part of a postpositional phrase. This first type is treated as postpositions in Moser and Marlett (2005: 877-879). Examples of the first type, the one that generally bears strong prosodic stress, are provided in (75) with *-no* ‘to’, in (76) with *-iqui* ‘toward’ and in (77) with *-ti* ‘on’.

- (75) **Hi-no** *mi-ifp.*
 1.POSS-to RP-arrive
 ‘He arrived to us.’ (Marlett 1981: 132)

- (76) **Mi-iqui** *t-apca?*
 2.POSS-toward INTERR-rain
 ‘Did it rain on you?’ (Marlett 1981: 133)

- (77) **Zaah hipcop** **i-ti** *cö-i-si-ifp* *ha,*
 sun DEM.PROX.stand 3.POSS-on OBL-?-IRR-arrive DECL
t-emyo.
 REAL.DEP-say.PL
 ‘They say that he is coming today (lit. this sun).’ (Marlett 1981: 134)

The other set of spatial relational nouns that do not receive extra prosodic stress seem to modify noun phrases and are followed by the locative determiner *hac*. Examples of this type of spatial relational noun are provided in (78) with *-pac* ‘back’ and in (79) with *-icp* ‘side’.

(78) *Ha-xz* *cop* *ha-aco* *quih*
 ABS.POSS-dog DEF.ART.SG.stand ABS.POSS-house DEF.ART.SG.UNSPEC
i-pac *hac* *ano* *c-aap* *iha.*
 3.POSS-back DEF.ART.SG.LOC 3.POSS.in SBJ.NMLZ-stand DECL
 ‘The dog is behind the house.’ (Marlett 1981: 135)

(79) *Mi-lit* *quih* *i-icp* *hac* *z*
 2.POSS-head DEF.ART.SG.UNSPEC 3.POSS-side DEF.ART.SG.LOC INDEF.ART
i-iqi *m-pooxquim...*
 3.POSS-toward 2-IRR.DEP.throw
 ‘If you throw one towards the side of your head...’ (Marlett 1981: 135)

With alienably possessed nouns, possession may be expressed predicatively, using a form of the verb *-yaa* ‘possess’. This verb agrees with the possessor, as is illustrated with *ihyaa* ‘I possess it’ in (80).

(80) *zixcam* *ih-yaa*
 fish 1- SBJ.NMLZ.possess
 ‘my fish’ (Moser and Marlett 2005: 831)

4.4 Parts of speech and lexicalization patterns

The discussion of Seri grammar thus far has focused on the morphosyntax of nouns and verbs. This is not a coincidence, as the Seri lexicon is primarily composed of lexical items that fall under the part of speech categories of verbs and nouns, as opposed to other parts of speech categories. However, Seri also has other types of word classes, including adverbs, determiners, postpositions, a small closed class of adjectives, conjunctions, auxiliaries, and particles (e.g., switch reference markers and the focus marker).²⁸

Most of the concepts similar to those expressed by adjectives in English are expressed by intransitive verbs in Seri. In order to modify a noun with one of these verbs, a deverbal form is used as part of a relative clause to modify a noun. This is illustrated

²⁸ There are also interjections in Seri, but I do not discuss those here. For further information see Moser and Marlett 2005: 886.

with the subject nominalized form of *-aziim* ‘pretty’ in (81), which could literally be translated as ‘the person’s face that is pretty’.

- (81) *Cmiique cop yeen hac c-aziim iha.*²⁹
 Seri.person DEF.ART.SG.stand 3.POSS.face DEF.ART.SG.LOC SBJ.NMLZ-pretty DECL
 ‘The person’s face is pretty.’ (AIM RelationalNouns)

However, there is a small class of around 20 words, not including archaic words, which are considered to be adjectives in Seri (Moser and Marlett 2005: 845). Some of these adjectives have very specific meanings, e.g., *poot* ‘medium sized’, which is only used when talking about mesquite trees (Moser and Marlett 2005: 845). A subset of these adjectives does not take any affixes, including verbal affixes that indicate aspect, person or negation. Most of these adjectives cannot function as the head of a nominal phrase either (Marlett ms. 825). An example of an adjective that can stand alone as a head of a noun phrase is provided in (82) with *ihmáa* ‘other’ where it modifies a nominal expression. Example (83) provides an instance of *ihmáa* ‘other’ used as the head of a nominal phrase.

- (82) *Xiica qu-iistox ihmáa pac quii-cot*
 thing.PL SBJ.NMLZ-has.life.PL other some 3.POSS.PL-with
c-aap iha.
 SBJ.NMLZ.stand DECL
 ‘There were other people (lit. things that have life) aboard.’ (RMH
 Landscape_7/12/06)

- (83) ..., *mos ihmáa pac i-síimlajc aha.*
 also other some 3;3-IRR.bring.PL AUX.DECL
 ‘...they will bring others.’ (Marlett ms. 825)

²⁹ Subject nominalized forms are ubiquitous in Seri discourse (Marlett ms. 339). They are frequently used in clauses instead of finite verb forms. The semantics of clauses with deverbal nouns do not seem to have the semantics expected from predicative constructions (Marlett ms. 339). In fact, it is not clear what the semantic difference is between clauses with finite verbs and those with deverbal forms, except that deverbal forms cannot express the same amount of information regarding tense, aspect and mood as finite verbs can. They are also limited as to person marking since they do not take such cross-reference markers.

5 The Seri grammar of space

This Chapter presents topics in the Seri grammar of space, with focus on how Seri speakers talk about the location of objects in space, how they talk about objects moving in space, the expression of spatial deixis, as well as what kinds of spatial frames of reference are used when talking about objects located in space in Seri.

Within the realm of spatial reference there are different strategies that speakers can use to locate referents in space. One way in which speakers can locate an object in space is without the use of a frame of reference or coordinate system. In this type of reference, the figure, the object that is being located, is located with respect to the ground, the reference entity with respect to which the figure is located, (following Talmy 1983, 2000a, 2000b) and involves a coordinate system that is used to specify the location of the figure with respect to other objects located in space. Additionally, speakers can specify the particular topological relation that exists between the figure and ground objects. The types of notions that are generally encoded in topological relators are those of inclusion/containment, contact, proximity, and distance.

Spatial deixis is another means for specifying the location of an object. Demonstratives provide information regarding the location of the nominal referent they modify. For instance, in the utterance *This hat belongs to John* the demonstrative *this* indicates a hat that is closer to the deictic center than other hats. Frequently, distance from deictic center is expressed in demonstratives. That is the case in Seri, which is discussed in more detail below.

A different strategy that is used to locate objects in space is one that involves a coordinate system or frame of reference. The strategy employed to locate the figure

object with respect to the ground object in this case is for the speaker to specify a particular search domain or coordinate system, which can be based on the ground object itself, in order to locate the figure object with respect to those coordinates. There are different types of frames of reference that speakers can use to locate objects in space. The discussion in this chapter about frames of reference focuses only on coordinate systems which are based in the horizontal plane and not in the vertical plane, such as the use of gravity to locate objects in the vertical dimension.

Motion descriptions almost always involve reference to a ground object (Levinson 2003: 68). In particular, motion event descriptions frequently specify a location toward which the figure is moving, also known as a goal, or the direction from which the figure is moving, also known as a source. Generally these types of descriptions involve a unique vector which specifies the direction of motion of the figure object. Spatial frames of reference can be involved in motion event descriptions to specify the location of the ground. Deixis, as well, can be used in motion event descriptions to indicate, for instance, motion toward or away from deictic center, such as *Edward came here*.

5.1 Locative descriptions

In this section, I discuss the basic structural and semantic properties of locative descriptions in Seri. By locative descriptions, I mean utterances which describe a static array consisting of a figure object as it is located with respect to a ground object. Such descriptions can be expressed in Seri with a verbal head that is a positional verb or a general locative verb. The most common elements in this position are: *-oom* ‘lie’, *-oop/-aap* ‘stand’, *-iij* ‘sit’, *-ocaai* ‘hang’, *-iih* ‘be located’, *-aahca* ‘be located’. Positional and locative verbs in Seri do not form a special conjugation class in Seri; this class of verbs is

distributionally defined as verbal predicates that occur in locative descriptions. These verbs are, for the most part, intransitive verbs which take an oblique ground phrase that is headed by a postposition. There are only a few postpositions that head ground phrases in Seri locative descriptions, two of which are primarily used in the context discussed here,³¹ namely *iti* ‘on it’ and *ano* ‘in it’. Additionally, some of the ground phrases contain (spatial) relational nouns, e.g., *-mocl* ‘under’, *-yat* ‘above’, and *-pac* ‘behind’, which further specify the location of the figure object with respect to the ground object by indicating a particular part of the ground object that the location of the figure object is projected from.

The discussion in this section is primarily drawn from data I collected with the Topological Relations Picture Series, also known as BowPed (Bowerman and Pederson 1993; see also Levinson and Wilkins 2006a: 570-575) and the Picture Series for Positional Verbs (Ameka et al. 1999), both of which are described in more detail in Chapter 3. If an example was elicited with one of the stimuli, the name of the stimulus and the number of the picture in the picture series is indicated after the free translation.

The construction that is primarily used in locative descriptions follows Seri’s basic word order of SV involving a noun phrase that refers to the figure object, a postpositional phrase which contains a noun phrase that refers to the ground object and a verbal head, in this order. Posture verb roots play an important role in Seri locative constructions. The posture verb roots that act as the base for some of the definite articles in Seri (see Chapters 4 and 6 for more information on the definite article system) occur as

³¹ There is also the postposition *-iqui* ‘toward’, as is illustrated in example (99). This postposition *iiqui* seems to differ from the other two, *iti* and *ano*, in that it does not refer to a strictly topological relation of containment or support, but rather, it projects a vector to indicate the point at which something is located or a direction in which an object is moving.

finite verb forms in locative descriptions. The following examples show locative descriptions involving the following posture verbs: *-oom* ‘lie’ in example (86), *-oop/-aap* ‘stand’ in example (87), and *-ijj* ‘sit’ in example (88).

(86) *I-c-aaspoj com hant i-ti i-c-aaspoj*
 3.POSS-UNSPEC.SBJ-write DEF.ART.SG.lie land 3.POSS-on 3.POSS-UNSPEC.SBJ-write
com i-ti m-oom.
 DEF.ART.SG.lie 3.POSS-on RP-lie
 ‘The pencil (lit. with which one writes) is on the desk (lit. land on which one writes).’ (GHF BowPed 59)

(87) *Cmaacoj cop ha-aco cap*
 man DEF.ART.SG.stand ABS.POSS-house DEF.ART.SG.stand
i-sxap hac i-ti y-ooop.
 3.POSS-top.of.head DEF.ART.SG.LOC 3.POSS-on DP-stand
 ‘The man is standing on the roof of the house.’ (GHF BowPed 34)

(88) *Siip quij hehe i-ti i-qu-iicolim quij*
 boy DEF.ART.SG.sit wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit
i-pac hac ano m-ijj.
 3.POSS-back DEF.ART.SG.LOC 3.POSS.on RP-sit
 ‘The boy is sitting behind the chair (lit wood on which one sits down).’
 (GHF BowPed 64)

The root of the locative verb that occurs in each of the examples above is the root that the definite article that co-occurs with the figure nominal is derived from. Also note that examples (86) and (88) contain verb forms which have the recent past prefix on them, while example (87) contains a verb form with the distant past prefix. The recent past prefix³² (*m-/mi-/im-*) is used for imperfective predication and the distant past prefix³³ (*yo-/y-*) is claimed to be used for past-time reference or habitual actions (Moser and Marlett 2005). The distinction between these tense/aspect/mood prefixes is discussed in more detail in Chapter 4.

³² In other descriptions of Seri it has been called the proximal (mood) prefix (Moser and Marlett 2005; Marlett 1981).

³³ This is called the distal (mood) prefix in Moser and Marlett (2005) and Marlett (1981).

The following examples illustrate locative descriptions which contain the general locative predicates *-iih* ‘be (located)’ in (89) and (90) and *-aahca* ‘be (located)’ in (91) and (92).

(89) *Zixcám i-pxási iictim quih eenim com*
 fish 3.POSS-meat OBL.NMLZ-be.cut DEF.ART.SG.UNSPEC knife DEF.ART.SG.lie
i-ti y-iih.
 3.POSS-on DP-be.LOC
 ‘There is a piece of (fish) meat on the knife.’ (GHF BowPed 12)

(90) *Ha-p-aspoj ha-noocaj tiix hant i-ti*
 SBJ.NMLZ-PASS-write SBJ.NMLZ.PASS-hold DEM land 3.POSS-on
i-qu-eaacalca com i-yat
 3.POSS-UNSPEC.SBJ-store.possessions DEF.ART.SG.lie 3.POSS-on.top
hac i-ti y-iih.
 DEF.ART.SG.LOC 3.POSS-on DP-be
 ‘The book (lit. what is written that is held) is on top of the bookshelf (lit. land on which one stores possessions).’ (AIM BowPed 8)

(91) *Ziic i-ime hehe cap i-ti c-aahca iha.*
 bird 3.POSS-nest wood DEF.ART.SG.stand 3.POSS-in SBJ.NMLZ-be.LOC DECL
 ‘The nest is in the tree.’ (RHF BowPed 67)

(92) *I-iqui cöiyanaaaij ihmaa pac i-ti*
 3.POSS-toward OBL.NMLZ.curve.around other some 3.POSS-on
c-aahca ha...
 SBJ.NMLZ-be.LOC DECL
 ‘It is on the other part that is like a curve...’ (AIM NovelObjects_PartElic 1)

In contrast with examples (86)-(90), examples (91) and (92) illustrate locative constructions that have nominalized forms of locative predicates followed by a declarative marker, as opposed to recent past or distant past prefix markers. The use of a nominalization plus a declarative marker is not specific to the verb *-aahca* ‘be (located)’ (nor to locative descriptions), as is illustrated below with *-ijj* ‘sit’ in (93), *-ocaa* ‘hang’ in (94), and *-oom* ‘lie’ in (95).

- (93) *Hehe i-s quij ha-mcanoiin quij ano*
 wood 3.POSS-fruit DEF.ART.SG.sit ABS.POSS-pot DEF.ART.SG.sit 3.POSS.in
qu-ij iha.
 SBJ.NMLZ-sit DECL
 ‘The fruit is in the pot.’ (RHF BowPed 2)
- (94) *Ziix c-oqueht an i-c-ooxoj*
 thing SBJ.NMLZ-bounce 3.POSS.in 3.POSS-UNSPEC.SBJ-DETRANS.inflate
quij hehe com i-ti c-ocaii ha.
 DEF.ART.SG.sit wood DEF.ART.SG.lie 3.POSS-on SBJ.NMLZ-hang DECL
 ‘The balloon is hanging from the tree.’ (RHF BowPed 20)
- (95) *Canoaa com xepe com i-ti c-oom iha.*
 boat DEF.ART.SG.lie sea DEF.ART.SG.lie 3.POSS-on SBJ.NMLZ-lie DECL
 ‘The boat is in the ocean.’ (RHF BowPed 11)

The examples above illustrate subject nominalizations, but there are also separate object and oblique nominalization prefixes in Seri, as discussed in Chapter 4. The form of the declarative marker that appears at the end of the utterance is determined phonologically, as is discussed in more detail in Chapter 4.

When it pertains to figure nominals that refer to animate referents, the selection of a posture verb in Seri depends on the actual posture of the referent. Since animate beings can change posture, there is variation as to the posture verbs that can be used with nouns that refer to animate entities. As for figure nouns that refer to inanimate objects, there is also some variation in which posture verbs can occur with different nouns. However, in general the co-occurrence is determined by the object’s spatial properties of shape or axial structure and support and orientation.³⁴ For example, (87) and (88) both refer to human beings, but when the man is standing, *-oop* ‘stand’ is used and when the boy is sitting *-ijj* ‘sit’ is used. On the other hand, examples (86) and (95) both refer to inanimate objects which have a longer horizontal axis than vertical one (*icaaspoj* ‘pen’ and *canoaa* ‘boat’), as such, when in their canonical positions, they co-occur with the posture verb –

³⁴ Note that this discussion differs slightly from that presented in O’Meara (2008).

oom ‘lie’. The figure nominal in (94), *ziix coqueht an icoopxoj* ‘balloon’, refers to an object that has only a slight longer vertical axis than horizontal axis, as such it co-occurs with the posture verb *-ij* ‘sit’. This is discussed in more detail in Chapter 6.

The following examples illustrate some additional verbs that occur in Seri locative descriptions, namely *-ocaii* ‘hang’ in (96), *-iti* ‘connected’ in (97), *-saamij* ‘curled in spiral’ in (98) and *-acp* ‘stuck’ in (99). The meanings expressed in these verb roots are very similar to those expressed in dispositional roots in Mayan languages (see Bohmeyer and Brown 2007 for further discussion of dispositional roots in Yucatec and Tseltal).

(96) *Ha-mac c-anoj com hant qu-iizc com*
 ABS-fire SBJ.NMLZ-burn DEF.ART.SG.lie land SBJ.NMLZ-front DEF.ART.SG.lie
i-ti m-ocaii.
 3.POSS-on RP-hang
 ‘The light (lit. fire that is burning) is hanging from the ceiling (lit. land that is facing).’ (GHF BowPed 63)

(97) *Hehe cop hast cop i-mozit*
 wood DEF.ART.SG.stand stone DEF.ART.SG.STAND 3.POSS-middle
hac i-ti y-iti.
 DEF.ART.SG.LOC 3.POSS-on DP-connected
 ‘The tree lives in the middle of the hill.’ (GHF BowPed 17)

(98) *Hax ano y-afin quih hehe it*
 fresh.water 3.POSS.in OBL.NMLZ-pass DEF.ART.SG.UNSPEC wood 3.POSS-base
ha-p-actim cop i-yat hac i-ti
 SBJ.NMLZ-PASS-cut.off DEF.ART.SG.stand 3.POSS-top DEF.ART.SG.LOC 3.POSS-on
yo-saamij.
 DP-curled.in.spiral
 ‘The hose (lit. in which water passes) is rolled up on top of the trunk of the tree (lit. base of wood that has been cut off).’ (GHF BowPed 23)

- (99) *Hehe i-s quij hehe i-ti*
 wood 3.POSS-fruit DEF.ART.SG.sit wood 3.POSS-on
i-c-oohiitim com i-mocl hac
 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS-below DEF.ART.SG.LOC
i-iqui cöi-y-acp
 3.POSS-toward OBL-DP-stuck
 ‘The fruit is stuck to the bottom of the table.’ (AIM BowPed 53)

As mentioned earlier in this section, there are two postpositions that play a large role in Seri locative descriptions. These two postpositions are *-ti* ‘on’ and *ano* ‘in’. A third postposition occurs with some locative verbs, namely, *-iqui* ‘toward’, but this postposition seems to play a larger role in motion event descriptions (see discussion in section 5.2) than in locative descriptions. In this section, the discussion primarily focuses on locative descriptions that include *-ti* and *ano*. In their most basic meanings, these two postpositions encode topological relations of contact/support and containment, respectively.

In order to specify more precisely where the figure object is located with respect to the ground object, a spatial relational noun can be used. Relational nouns, as discussed in Chapter 4, are inalienably possessed nouns that encode a spatial relation or refer to a body part or other items that are intimately possessed (e.g. skirts, hats, shoes, money, etc.). In locative descriptions, relational nouns refer to a part of the ground object or a spatial region projected from the ground object where the figure object is located. In example (87), *-sxap* ‘top of head’ refers to a part of the house, the ground object, in examples (90) and (98) *-yat* ‘top’ refers to the top of the ground object (a bookshelf and a tree trunk, respectively) and in example (99) *-mocl* ‘below’ refers to the bottom of the table (where the figure object is stuck to). On the other hand, *-pac* ‘behind’ (this term also means ‘its back’) in example (88) refers to the area projected from the ground object (a

chair) and in example (97), *-mozit* ‘middle’ makes reference to the area in between the hills, which is not part of the hills itself.

Similar to *-pac* ‘behind’ in example (88), the examples below provide further illustration of the way that relational nouns can make reference to whether or not the figure object is in contact with a ground object or projection of a spatial region from a ground object. More specifically, in example (100), the figure object, the balloon, is located in the space above the top of the hill. In order to express that, the speaker uses the relational noun *-tacl* ‘above’. However, if the speaker wishes to express that the ball is on top of the hill, but still in contact with the hill, she will use the relational noun *-yat* ‘top’, as in example (101).

(100) *Ziix c-oqueht quiij hast cop i-tacl*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit stone DEF.ART.SG.stand 3.POSS-above
hac i-ti y-ij.
 DEF.ART.SG.LOC 3.POSS-on DP-sit
 ‘The balloon is above [in the space above] the hill.’ (AIM 11/22/08)

(101) *Ziix c-oqueht quiij hast cop i-yat*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit stone DEF.ART.SG.stand 3.POSS-top
hac i-ti y-ij.
 DEF.ART.SG.LOC 3.POSS-on DP-sit
 ‘The balloon is on top of the hill.’ (AIM 11/22/08)

In terms of its classification with respect to the basic locative construction (BLC) typology of Levinson and Wilkins (2006b), Seri appears to be best classified as a multi-verb language, or a language that uses different verbs in the BLC based on the actual configuration of the figure object (see, for example, Kutscher and Schultze-Berndt 2007 for a discussion of German as a multi-verb language). The BLC is the construction used to locate an easily movable inanimate figure with respect to a ground to which it is not attached in response to a ‘where’ question (Levinson and Wilkins 2006b; Levinson and

Meira 2003). In Seri, the BLC employs posture verbs as well as a richer set of dispositional verbs.³⁵ However, Seri uses a smaller set of verbs in its BLC than some of the languages similarly classified as such, e.g., Tseltal and Likpe (Levinson and Wilkins 2006b). Seri does not behave like a prototypical multi-verb language, but rather closer to a postural verb language. Postural verb languages such as Dutch and Arrernte use a small set of posture verbs, usually 3-4, in their locative constructions. On the other hand, Seri does not use posture verbs in a classificatory way, which is atypical of postural verb languages. Additionally, Seri uses a general locative verb in the BLC as a default verb when the actual disposition of the figure object is not known, which is more characteristic of a multi-verb language.

Further, in Dutch, a postural verb language, posture verbs are used in ‘where’ questions and locative descriptions, whereas the copula, *zijn* ‘be’, is rarely used in locative descriptions. In cases where the orientation of the figure is not known to the speaker, the posture verb is preferred, although the copula is also acceptable (van Staden, Bowerman and Verhelst 2006: 494).

(102) *Waar staan/ ?zijn de kopjes?* (Dutch)
 where stand/ are the cups
 ‘Where are the cups?’ (van Staden, Bowerman and Verhelst 2006: 494)

In contrast, in Seri, as is illustrated by example (103), the generic locative verb *-iih* is generally used in ‘where’ questions. Posture verbs are used only when the position of the figure is established or fixed (e.g., *iime* ‘his house, as illustrated below in example (104)).

(103) *ǀZiix an icoosi quij háqui t-iih?*
 cup DEF.ART.SG.sit where REAL.DEP-be.LOC
 ‘Where is the cup?’

³⁵ In order to determine the BLC, I looked at responses to core scenes from BowPed which feature an easily movable figure object and a ground that it is not attached. These scenes are thought to represent prototypical topological relations.

- (104) *ɔI-ime* *quih* *háqui* *hac*
 3.POSS-house DEF.ART.SG.UNSPEC where DEF.ART.SG.LOC
ano *t-ap?*
 3.POSS.in INTERR-stand
 ‘Where is his house?’ (Moser and Marlett 2005: 67)

If the figure nominal can combine with different posture verbs in Seri and the figure is not visible to the speaker, it is especially preferred to ask the question ‘Where is the [FIGURE]?’ using *-iih* ‘be located’.

Seri exhibits properties of both a multi-verb language and a posture verb language. Another language that exhibits properties of both types of languages under the BLC typology is Goemai, a Chadic language that is spoken in Central Nigeria. Goemai has a set of postural verbs that behave differently than what previous descriptions of posture verb languages indicate. More specifically, the semantics of Goemai postural verbs take into account the locative relation between the figure and the ground and not the posture (in the sense of human posture) or abstract shape of the figure (Hellwig 2003: 148). Figure objects of different dimensions, extensions and degrees of flexibility can occur with almost all of the posture verbs in Goemai. Goemai has five locative verbs, the first four of which are postural verbs: *lang* ‘hang/move’, *t’ong* ‘sit’, *d’yem* ‘stand’, *t’o* ‘lie’ and *d’e* ‘exist’ (Hellwig 2003: 10). The fifth verb, *d’e*, is used, for instance, when the locative relation between the figure and the ground is unknown or when none of the postural verbs can adequately describe the locative relation (Hellwig 2003: 152-155). This feature is similar to the use of Seri *-iih* ‘be (located)’. This characteristic is particularly atypical of postural verb languages, like Dutch, and more characteristic of multi-verb languages. One reason for this is that postural verb languages employ posture verbs in a classificatory way. Inanimate objects have a default posture within the

classificatory system. The default posture of an object corresponds with one of the posture verbs. In a locative construction, a noun that refers to a particular object will occur with the posture verb that corresponds to its default posture unless the object is in a non-canonical position. This further explains the preference of posture verbs, as opposed to a general locative verb, in ‘where’ questions in posture verb languages like Dutch (see example (102)). In such languages the speaker assumes the object is in its default position and correspondingly uses the default posture verb in the ‘where’ question.

Goemai and Seri, like postural verb languages, employ a small set of posture verbs in the BLC, but unlike postural verb languages they do not use posture verbs in a classificatory way. Like multi-verb languages, Goemai and Seri employ a general locative verb/copula in their BLC which acts as a default locative predicate when the actual position of the figure is unknown. Seri acts in more ways like a multi-verb language, fulfilling at least two of the suggested criteria for membership in this category of the BLC typology. Consequently, Seri seems to be best categorized as a multi-verb language, as opposed to a posture verb language.

There are a few transitive locative verbs which do not combine with an oblique postpositional phrase, but rather with an argument noun phrase. An example of a transitive locative verb is given in (105), *-iijam* ‘wrapped around’, where the figure object is the object that’s wrapped and the ground is the thing that the figure is wrapped around.

- (105) *Ziix hax ano y-afin quih hehe i-t*
 thing freshwater 3.POSS.in OBL.NMLZ-pass DEF.ART.SG.UNSPEC tree 3.POSS-base
quij qu-iijam iha.
 DEF.ART.SG.sit SBJ.NMLZ-wrapped.around DECL
 ‘The hose (lit. thing through which freshwater passes) is wrapped around the stump
 (lit. base of the tree).’ (RHF BowPed 23)

Further examples are provided below where *ano* ‘in it’ expresses a relation of containment. In (107), the house is said to be inside of a fence or corral. In (108), the ball is said to be in the space below the chair, directly underneath the seat area.

(107) *Haaco cop hant ha-zaain quij*
 ABS.POSS-house DEF.ART.SG.stand land SBJ.NMLZ-make.corral.PASS DEF.ART.SG.sit
ano c-aap iha.
 3.POSS-in SBJ.NMLZ-stand DECL
 ‘The house is inside of the corral (lit. land with which was made a corral).’
 (RHF BowPed 15)

(108) *Ziix c-oqueht tiix hehe i-ti i-qu-iicolim*
 thing SBJ.NMLZ-bounce DEM wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL
quij i-mocl hac ano y-ijj.
 DEF.ART.SG.sit 3.POSS-under DEF.ART.SG.LOC 3.POSS.in DP-sit
 ‘The ball (lit. thing that bounces) is below the chair (lit. wood on which one sits).’
 (AIM BowPed 16)

Additionally, *ano* ‘in it’ is used when referring to location of a person in a place, as is shown in (109) where Francisca is described as being in the place that is called ‘Pozo Coyote’.

(109) *Francisca quih Hatajc ano y-ijj.*
 Francisca DEF.ART.SG.UNSPEC Pozo.Coyote 3.POSS.in DP-sit
 ‘Francisca is in Pozo Coyote.’ (AIM EnterExitVerbs)

5.3 Motion event descriptions

This section describes the structure and semantics of motion event descriptions in Seri. For the purpose of this Chapter, I am going to use the intuitive notion of motion event as follows: an object moves along a trajectory or path, involving a change of location. Krifka (1998) has more formally described translational motion as involving a mapping between the time course of the motion event and the path that is traversed by the figure object. In addition to describing how Seri speakers talk about translational motion events,

Additionally, the motion verb *contica* ‘go’ requires the spatial applicative prefix *co-*. The spatial applicative prefix indicates that there will be a noun phrase which refers to the ground object. An example of a motion event description with *contica* ‘go’ is provided in (112).

- (112) *Eenm haxaaza tintica ziix hax c-weetij oo*
 metal ABS.POSS-arrow DEM.MED.go thing very SBJ.NMLZ-round PART
an hac co-nt-iya.
 3.POSS.area DEF.ART.SG.LOC OBL-away-DP.go
 ‘The bullet enters the inside of the wall.’ (AIM MoVerb_EnterExit_14)

The verb *-iin* ‘go’ can combine with either a postposition as in example (113) or with a spatial applicative prefix as in (111) above. The core meaning of the verbal predicate *-iin* ‘go’ is the same regardless of whether it is used with the spatial applicative prefix *cö-/co-* or appears with the postposition *-iqui* ‘toward’³⁶ (which is the preposition used to introduce a path phrase). More specifically, the verb *-iin* ‘go’ does not encode the direction of motion of the figure. When *-iin* ‘go’ co-occurs with *-iqui* ‘toward’, as is illustrated in examples (113) and (114), the ground object does not appear as the argument of the verb, since the verb’s subcategorization does not allow for that, but rather the ground phrase is headed by the relational noun *-iqui* ‘toward’, a postposition that heads the path phrase containing the ground-denoting nominal. In example (113) the ground phrase is headed by *-iqui* ‘toward’ and the noun *hapx* ‘place outside’, which refers to the place that the ball emerges from between the trees, is the ground-denoting nominal. In example (114) the ground-denoting nominal happens to be the first person possessive prefix *hi-* which refers to the region of space that the speaker is located in.

³⁶ Note that this latter postposition does not encode a particular direction, as the gloss that I use with it implies. Rather, it means something like ‘on a straight line with respect to X’, where ‘X’ is entity referred to by the possessive prefix that occurs with *-iqui*. However, for lack of a better single-word gloss in English, I use ‘toward’.

(113) *Ziix c-oqueht quij hehe hant ha-nipatim*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit wood land SBJ.NMLZ-hit.PASS.PL
coi i-icotaj quih ano
 DEF.ART.PL 3.POSS-between.PL DEF.ART.SG.UNSPEC 3.POSS.in
mota, hapx i-iqui y-iin.
 toward.REAL.DEP.move outside 3.POSS-toward DP-go
 ‘The ball (lit. thing that bounces) came outside from between the trees.’
 (AIM MoVerb_EnterExit_19)

(114) *Francisca quih hi-iqui y-iin.*
 Francisca DEF.ART.SG.UNSPEC 1.POSS-toward DP-go
 ‘Francisca is coming (toward me).’ (AIM EnterExitVerbs)

Transitive motion verbs, on the other hand, select for an argument that refers to the path – either source, goal or route, which gets expressed as a noun phrase. Examples (115), (116) and (117) illustrate simple motion event descriptions involving transitive verb forms, specifically *-aao* ‘pass’, *-yaii* ‘approach’ and *-iix* ‘go away from’, respectively.

(115) *Carolina quih hast cop i-izc*
 Carolyn DEF.ART.SG.UNSPEC stone DEF.ART.SG.stand 3.POSS-face
hac i-y-aao.
 DEF.ART.SG.LOC 3;3-DP-pass
 ‘Carolyn went past the front of the mountain.’ (AIM EnterExitVerbs)

(116) *Ziix c-oqueht tintica hehe zamij quij*
 thing SBJ.NMLZ-bounce DEM.MED.go wood palm.tree DEF.ART.SG.SIT
i-n-yaii.
 3;3-RP-approach
 ‘The ball (lit. thing that bounces) approached the box (lit. wooden palm tree).’
 (GHF MoVerb ComeGo 1)

(117) *Ziix c-oqueht quij hanzajipj cop*
 thing SBJ.NMLZ-bounce DEF.ART.SG.SIT plate DEF.ART.SG.STAND
i-m-iix.
 3;3-RP-go.away.from
 ‘The ball (lit. thing that bounces) goes away from the plate.’ (RAndT MoVerb FigureGround 2)

Notice that *-iin* ‘go’ on its own does not necessarily encode directionality, as is illustrated with examples (118) and (119) where the event involves Francisca going away

from some place, in comparison with example (113) above and example (137) below where the event involves the figure object coming toward a particular point (both examples happen to have the ground object be the speaker, but that is not necessary).

(118) *Francisca quih hant z i-iqui y-iin.*
 Francisca DEF.ART.SG.UNSPEC land INDEF.ART 3.POSS-toward DP-go
 ‘Francisca left [some place].’ (AIM EnterExitVerbs)

(119) *Francisca Hatajc quih i-iqui y-iin.*
 Francisca Pozo.Coyote DEF.ART.SG.UNSPEC 3.POSS-toward DP-go
 ‘Francisca left Pozo Coyote.’ (AIM EnterExitVerbs)

According to Moser and Marlett (2005: 858-859) many verbs in Seri combine with certain postpositions, relational nouns or adverbs resulting in particular interpretations which differ from the interpretation of the verb on its own. They note that in these cases, the postposition always occurs very close to the verb form. Their comments refer to combinations of verb forms and postpositions which are used to describe motion events, as well as other types of events. With respect to the motion verbs of this type, the semantic interpretation of the verb plus the postposition seems to be somewhat predictable. In general, the selection of the postposition that co-occurs with the verb has to do with the geometry of the ground nominal and the topological relation between the figure object and ground object. For instance, in examples (120) and (121) the subject nominalized verb form *moca* ‘move toward’ combines with the postpositions *ano* ‘in it’ and *iti* ‘on it’, respectively, depending upon the geometry of the object from which the figure is coming from. If the figure, which is in this case *Carolina*, is coming from inside of an enclosure or from a spatial region, then the postposition *ano* ‘in it’ is selected, as in example (120). If the figure is coming from some place that is not an enclosure or a spatial region, then *moca* combines with *iti* ‘on it’, as in example (121).

(120) *Carolina quih hant i-pzx com*
 Carolyn DEF.ART.SG.UNSPEC land OBL.NMLZ-chipped DEF.ART.SG.lie
ano moca ha.
 3.POSS.in toward.SBJ.NMLZ.move DECL
 ‘Carolyn is coming from the arroyo.’ (AIM EnterExitVerbs)

(121) *Carolinaquih Tahejöc quij i-ti*
 Carolyn DEF.ART.SG.UNSPEC Tiburon.Island DEF.ART.SG.sit 3.POSS-on
moca ha.
 toward.SBJ.NMLZ.move DECL
 ‘Carolyn is coming from Tiburon Island.’ (AIM EnterExitVerbs)

It might not be entirely clear why *iti* ‘on it’ occurs with *moca* ‘move toward’ when the ground object is *Tahejöc* ‘Tiburon Island’ as is illustrated in example (121). As background, Tiburon Island is the largest of the midriff islands in the Sea of Cortez. It has some mountainous parts, but is still an island and as such, the proper name which refers to it co-occurs with the definite article *quij* which is derived from the posture verb *-ijj* ‘sit’.³⁷ Compare that with the ground phrase *Hant Ihiin com ano* ‘in Angel de la Guarda’ in example (122). Angel de la Guarda is another one of the midriff islands in the Sea of Cortez. It is much more narrow and longer than Tiburon Island and as such it co-occurs with the definite article *com* which is derived from the posture verb *-oom* ‘lie’. Because the ground phrase is *Hant Ihiin com* and contains the definite article *com*, the postposition must be *ano* ‘in it’ and not *iti* ‘on it’.

(122) *Carolina quih Hant Ihiin com*
 Carolyn DEF.ART.SG.UNSPEC Angel.de.la.Guarda DEF.ART.SG.lie
ano/*i-ti moca ha.
 3.POSS.in/ 3.POSS-on toward.SBJ.NMLZ.move DECL
 ‘Carolyn is coming from Angel de la Guarda.’ (AIM EnterExitVerbs)

A similar case to *ano/iti moca* can be seen with *ano/iti -ectim* ‘pass’ in examples (123) and (124). In both of these cases, the same verb root occurs with ground phrases that are headed by different postpositions. The postposition is determined as a result of the spatial

³⁷ For more information on definite articles in Seri, see the discussion in Chapter 4.

properties of the ground object. *Socaaix* ‘Punta Chueca’, one of the two Seri villages, is conceptualized as a spatial region with unclear boundaries that a person can be thought of as being contained in. Consequently, the postposition that heads the ground phrase containing *Socaaix* is *ano* ‘in it’.

- (123) *Carolina quih Socaaix hac ano y-ectim.*
 Carolyn DEF.ART.SG.UNSPEC Punta.Chueca DEF.ART.SG.LOC 3.POSS.in DP-pass
 ‘Carolyn passed by Punta Chueca.’ (AIM EnterExitVerbs)

In example (124) the ground phrase is headed by *iti* ‘on it’ and the ground-denoting entity is a part of *hast cop* ‘mountain’. In this case it seems that the speaker conceptualizes the front part of the mountain as a location that someone does not exist in, but rather a location that someone is at.

- (124) *Carolina quih hast cop i-izc*
 Carolyn DEF.ART.SG.UNSPEC stone DEF.ART.SG.stand 3.POSS-face
hac i-ti y-ectim.
 DEF.ART.SG.LOC 3.POSS-on DP-pass
 ‘Carolyn passed by the front of the mountain.’ (AIM EnterExitVerbs)

However, outside of the motion domain, there do seem to be some idiomatic combinations of verbs plus postpositions, relational nouns and adverbs, such as *miizj -aai* ‘protect’, which literally means ‘do well’. This expression is illustrated in (125).

- (125) *Miizj in-s-aai aha.*
 well 2-IRR-do DECL
 ‘You should take care of it.’ (Moser and Marlett 2005: 55)

Other instances of such combinations include *hant -iquim* ‘take note of’, which literally means ‘put [long or loose thing] on land’, *iiqui -iquim* ‘suspect’, which literally means ‘put [long or loose thing] toward it’, and *iiqui -aai* ‘throw’, which literally means ‘do toward’. These idiomatic collocations are most likely memorized by speakers as there

does not seem to be a method for predicting the compositional interpretation of the expressions.

5.3.2 Path-neutrality in Seri ground phrases

Ground phrases in Seri are path-neutral (Bohnenmeyer et al. 2009, O’Meara 2009). In other words, ground phrases in Seri express PLACE functions and PATH functions are expressed in the verb (following Jackendoff 1983). The fact that path (or location change) information is encoded in the verb in Seri, and not in the ground phrase, contributes to the fact that Seri can be categorized as a verb-framed language as opposed to a satellite-framed language (following Talmy’s 2000 typology of lexicalization types in motion event coding). In satellite-framed languages, path functions are expressed outside of the verb root in particles, adverbs, prepositions or case markers. English is an example of a satellite framed language where the path is encoded in the prepositional phrase (cf. *into the box*), as is illustrated in example (126). Spanish, on the other hand, shows many characteristics of a verb-framed language, as is illustrated in (127) where the path is encoded in the verb root, *sal-* ‘exit’, and not in the prepositional phrase (examples taken from Bohnemeyer and Pérez Báez 2008).

(126) *The ball rolled out of the box.*

(127) *La pelota salió de la caja.*
the ball left from the box
‘The ball exited (from) the box.’

The path-neutrality of ground phrases in Seri is illustrated in examples (128) and (129). Both ground phrases are headed by the postposition *iti* ‘on it’, but the path type expressed in (128) with the verb form *moca* ‘move toward’ is source and the path type expressed in (129) with the verb form *tafp* ‘arrive’ is goal.

- (128) *Carolina quih hast cop i-ti*
 Carolyn DEF.ART.SG.UNSPEC stone DEF.ART.SG.stand 3.POSS-on
moca ha.
 toward.SBJ.NMLZ.move DECL
 ‘Carolyn is coming from the hill (lit. standing stone).’ (AIM EnterExitVerbs)
- (129) *Ziix c-oqueht quij hast cop i-mozit*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit stone DEF.ART.SG.stand 3.POSS-middle
hac i-ti t-afp...
 DEF.ART.SG.LOC 3.POSS-on REAL.DEP-arrive
 ‘The ball (lit. thing that bounces) arrived in the middle of the hill... (lit. standing stone)’ (THF MoVerbs_Path)

These two examples illustrate that path is not encoded in ground phrases in Seri since both ground phrases are headed by the same postposition, but the path types expressed in each utterance differ.

Similarly, argument noun phrases that function as ground phrases which indicate the location of source, goal or route of the motion event are not distinguished by the type of path that is expressed. This is illustrated in example (130) where the motion event description involves a goal path and in example (131) where the motion event description involves a source path. These examples further illustrate that the path function in Seri is encoded in the verb and not in the ground phrase.

- (130) *Ziix c-oqueht tintica hehe zamij quij*
 thing SBJ.NMLZ-bounce DEM.MED.go wood palm.tree DEF.ART.SG.sit
i-n-yaai.
 3;3-RP-approach
 ‘The ball (lit. thing that bounces) approached the box (lit. wooden palm tree).’
 (GHF MoVerb ComeGo 1)
- (131) *Ziix c-oqueht quij hanzajipj cop*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit plate DEF.ART.SG.stand
i-miix.
 3;3-RP.go.away.from
 ‘The ball (lit. thing that bounces) goes away from the plate.’ (RAndT MoVerb FigureGround 2)

Additionally in Seri, similar to the case of Yucatec Maya (Bohnenmeyer 2003), there is a restriction such that no more than one location-change event can be expressed per clause. As discussed earlier, path is encoded in the verb in Seri and postpositional phrases are path-neutral. Consequently, in order to distinguish between different path types in motion event descriptions, Seri speakers must use different clauses with different verbs. This follows from the “argument uniqueness constraint” (AUC) as is discussed in Bohnemeyer 2003, which was similarly discussed in Carlson (1984: 274) as “thematic uniqueness” and in Goldberg (1991) as the “Unique Path constraint”. The AUC indicates that no two structural arguments or adjuncts of the same clause are to be assigned the same semantic role (Bohnenmeyer 2003). This would prevent two ground phrases from being assigned the same path function in one clause of a motion event description, as is illustrated for English in (132).

(132) **Rodrigo went out of his office from the front desk to the parking lot.*

Instead of (132), an English speaker could say something like the utterance provided in (133) which involves two different motion verbs to account for the change of location of going from being inside to outside of the office and then the change of location of going from the front desk to the parking lot.

(133) *Rodrigo left his office and went from the front desk to the parking lot.*

In order to describe that the ball rolled from the tree to the hill in Seri, you can say the utterance which is provided in example (134). The first phrase contains *iti mota* ‘move toward’ which indicates the source of the path that the ball traverses. The manner of motion of the ball is provided with the nominalized form *hant cmaasij* ‘that rolls’. Finally, the location of the end of the path that the ball traverses is *hast cop ihiiin hac*

‘near the hill’ and the fact that the ball stopped moving there is indicated by *haquix yij* ‘stopped there [sitting]’.

- (134) *Ziix c-oqueht quiq hehe ha-pec*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit wood SBJ.NMLZ-PASS-plant
cop i-hiin hac i-ti mota,
 DEF.ART.SG.stand 3.POSS-near DEF.ART.SG.LOC 3.POSS-on toward.REAL.DEP.move
hant c-maasij, hast cop i-hiin hac
 land SBJ.NMLZ-roll stone DEF.ART.SG.stand 3.POSS-near DEF.ART.SG.LOC
i-t haquix y-ij.
 3.POSS-on there DP-sit
 ‘The ball (lit. thing that bounces) came from near the tree (lit. wood that was planted), rolling, it stopped near the hill.’ (AIM MoVerb_Paths 10)

In (134) the final state of the location change event is expressed by a locative description. Alternatively, if the verb encodes a goal path as in (135), then the source of the motion event can be expressed in a locative description such as *ziix coqueht quiq hehe zamij ihin hac iti tij*... ‘the ball was near the box...’. This example was produced in order to describe a motion event that involved a ball rolling from a wooden box toward the viewer of the motion event.

- (135) *Ziix c-oqueht quiq hehe zamij quiq*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit wood palm.tree DEF.ART.SG.sit
i-hiin hac i-ti t-ij, hant c-maasij,
 3.POSS-near DEF.ART.SG.LOC 3.POSS-on REAL.DEP-sit land SBJ.NMLZ-roll
hi-iqui y-iin.
 1.POSS-toward DP-go
 ‘The ball (lit. thing that bounces) was near the box (lit. wood palm tree) and went rolling toward us.’ (AIM MoVerb_ComeGo 4)

A further example of the way in which Seri speakers describe change of location or motion events is given in (136). In this utterance the speaker first describes the location of the figure object, the ball, in order to indicate the place where the movement of the ball begins. The speaker then specifies the manner of motion with *hant cmaasij* ‘that rolls’, followed by the only motion verb in the utterance *iiqui tiin* ‘goes toward it’ in order to

indicate the direction of movement. Finally the speaker indicates the location where the ball stops moving with a locative description.

- (136) *Ziix c-oqueht hehe zamij quij i-icp*
 thing SBJ.NMLZ-bounce wood palm.tree DEF.ART.SG.sit 3.POSS-side
hac i-ti t-ij, hant c-maasij cöipatj
 DEF.ART.SG.LOC 3.POSS-on REAL.DEP-sit land SBJ.NMLZ-roll side
hac i-iqui t-iin, hehe hant ha-nip
 DEF.ART.SG.LOC 3.POSS-toward REAL.DEP-go wood land SBJ.NMLZ-PASS.hit
cap i-t hac i-ti haquiix m-ij.
 DEF.ART.SG.stand 3.POSS-base DEF.ART.SG.LOC 3.POSS-on DEM RP-sit
 ‘The ball was on one side of the box, rolling to one side, it stopped at the base of the post.’ (GHF MoVerbs_ComeGo 7)

5.3.3 Manner of motion

To specify the manner of motion of an entity in Seri, a manner verb is used as a secondary predicate. Motion event descriptions which specify the manner of motion of the figure object generally require some form of additional verbal predication in Seri, resulting in manner verbs appearing as nominalized verb forms like *hant cmaasij* ‘that rolls’ as in example (137) or as dependent marked verb forms such as *toquehetim* ‘bouncing’ as in example (138). In the case of the expression *hant cmaasij*, which literally means ‘land that rolls’, *hant* ‘land’ is not what is being modified by the subject nominalized verb form *cmaasij* ‘that rolls’. The expression *hant cmaasij* is a likely a compound expression modifying *ziix coqueht quij* ‘the ball’.

- (137) *Ziix c-oqueht quij hant c-maasij*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit land SBJ.NMLZ-roll
hi-iqui qu-iin iha.
 1.POSS-toward SBJ.NMLZ-go DECL
 ‘The ball (lit. thing that bounces) comes toward us, rolling.’
 (AIM MoVerb_ComeGo_5)

- (138) *Ziix c-oqueht quij hant t-ooit,*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit land REAL.DEP-fall
t-oquehetim, i-icp hac hi-iqui m-iin.
 REAL.DEP-bounce.ITER 3.POSS-side DEF.ART.SG.LOC 1.POSS-toward RP-go
 ‘The ball (lit. thing that bounces) fell and then went bouncing toward me.’
 (GHF MoVerbManner_4)

The form of *-oqueht* ‘bounce’ that is used in example (138) contains the iterative stem of the verb *-oquehetim* which refers to the ball bouncing repeatedly. This form is also a dependent marked form, as already mentioned. As such, this example illustrates the way that clauses are commonly chained together in Seri with one or more clauses containing a dependent marked verb form and one clause containing an independent verb form (Marlett ms. 110).

Manner verbs can be the head of an independent clause (or a matrix predicate) in Seri. This is illustrated with the verb form *hant yomaasij* ‘rolled’ in both examples (139) and (140).

- (139) *Ziix c-oqueht quij hehe hac qu-imej zo*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit wood water SBJ.NMLZ-flow INDEF.ART
i-mac cö-c-ooyam z i-ti
 3.POSS-middle OBL-SBJ.NMLZ-go.out.to.sea INDEF.ART 3.POSS-on
hant yo-maasij.
 land DP-roll
 ‘The ball (lit. thing that bounces) rolled along the stick that crosses the river.’
 (AIM MoVerb Paths 3)

- (140) *Hehe an i-c-aaij ticom hant*
 wood 3.POSS.area.of 3.POSS-UNSPEC.SBJ-fetch.water DEM.MED.lie land
yo-maasij.
 DP-roll
 ‘The water drum (lit. with which one fetches water from the desert) rolled down.’
 (Moser and Marlett 2005: 180)

Some of the verbs which express manner of motion in Seri are not part of a more complex expression, but quite a few of the expressions that describe manner of motion

are complex, for example *hant cmaasij* ‘roll’, *xepe ano caalim* ‘swim’, *hant cöqueemij* ‘crawl’, and *haxa quiica* ‘float’, to name a few.

5.4 Spatial deixis

The interpretation of most linguistic utterances is context dependent. Deixis is the means by which speakers encode contextual information in their speech (see, for example Fillmore 1997[1975]; Levinson 1983). According to Bohnemeyer (2001), “deixis is a type of reference constituted by the meaning of a linguistic sign being relativized to the extra-linguistic context in which the sign is used.” Given this definition, it seems that the interpretation of many linguistic utterances would be dependent upon deixis. A relatively broad view of deixis was put forth in the seminal work by Bühler (1934), which has been very influential within linguistics as it pertains to the study of deixis.³⁸ Bühler has been credited as the first to describe deictic uses in a given speech situation can basically be broken down into three types of deixis: personal, temporal and local (or spatial). Personal deixis concerns the role of speech participants in the speech event in which the utterance is spoken. It involves items such as *I*, *you* and *my* in English. Temporal deixis concerns the way that temporal points and intervals are encoded relative to the time during which an utterance is spoken. It involves items such as *now*, *today* and *formerly* in English. Finally, spatial deixis concerns the way that spatial locations are encoded relative to the location of the participants in a given speech event. It involves items such as *here*, *there* and *left* in English (Levinson 1983: 62). In this section I limit my discussion to spatial deixis in Seri. More specifically, the discussion of spatial deixis in Seri will be presented using the following categories: entity-denoting items (e.g., *this* and

³⁸ See, for instance the volume edited by Weissenborn and Klein 1982 where frequent references to Bühler’s deictic modes or *Zeigarten* are made.

that), place-denoting items (e.g., *here* and *there*) and path-denoting items (e.g., *come* and *go*).

5.4.1 Entity-denoting spatially deictic words

Spatially deictic words that are entity-denoting in Seri include what in traditional grammar would be called demonstrative adjectives and demonstrative pronouns.

Throughout this section I will refer to these types of items as demonstratives that are used attributively and pronominally. In Chapter 4, there is a discussion of the selection restrictions of these demonstratives in Seri, especially as they are similar to the selection restrictions of definite articles. In this section the discussion of demonstratives focuses on demonstratives that are used attributively as well as those that are used pronominally. In the case of attributive demonstratives, this section will focus on cases where the demonstrative modifies an entity-denoting nominal. With respect to pronominal demonstratives, this section looks at instances where the antecedent of the pronominal is entity-denoting.

The previous description of demonstratives that are used attributively in Seri has presented a rather complex system that is based on various properties of the referent that the nominal it modifies refers to, such as: posture, type of movement, whether it is place-denoting or not, whether it is a liquid, whether it is a group of items, number and distance to speaker and/or addressee (proximal, medial or distal). See Table 7 in Chapter 4 for the details of how these properties are distributed in the demonstrative system in Seri.

The sections that follow look at the role proximity plays in demonstratives that are used attributively in Seri, beginning with the attributive demonstratives that are used to referents that are proximal to the speaker and/or addressee. For instance, a proximal

attributive demonstrative can be used if a speaker refers to one of their own body parts, as is illustrated in example (141) with *hiteepni hipcop* ‘this front tooth (of mine)’, where the speaker is referring to a particular tooth that hurts. The speaker was pointing to the tooth they were referring to while they were saying this utterance.

(141) *Hi-teepni hipcop ih-x-ajiz.*
 1.POSS-front.tooth DEM.PROX.stand 1-EMPH-hurt
 ‘This front tooth (of mine) hurts.’ (OPT WilkinsQuestionnaire 1)

A proximal attributive demonstrative can also be used in cases where a small movable object such as a fly is on the addressee’s body, but within close proximity to the speaker. This is illustrated with *xcoomoj hipquij* ‘this fly’ in example (142) where the speaker is attempting to draw the addressee’s attention to the fly that is on their body. In this case the speaker was pointing to the place where the fly was located on the addressee’s body.

(142) *Xcoomoj hipquij hizac i-ti qu-ij, in-t-aho?*
 fly DEM.PROX.sit here 3.POSS-on SBJ.NMLZ-sit 2-INTERR-see
 ‘This fly is here, do you see it?’ (MLA WilkinsQuestionnaire 4)

Another case where a proximal attributive demonstrative can be used is in a case where the referent is in very close proximity (reachable distance) to the speaker. In this case the referent was in front of the speaker on a table, but the speaker was not wearing the shirt. This is illustrated with *haficj hipquih* ‘this shirt (of some person)’ in example (143).

(143) *Ha-ficj hipquih he ih-yaa ha.*
 ABS.POSS-shirt DEM.PROX.UNSPEC 1 1- SBJ.NMLZ.possess DECL
 ‘This shirt (of some person) is mine.’ (OPT Demonstratives_07)

The use of the proximal attributive demonstrative is not determined by whether an item is inalienably possessed, as with body parts, in example (141) and personal effects (143). This is illustrated in example (144) with *tasa hipquij* ‘this cup’. In this case the cup was in front of the speaker on a table, reachable from where the speaker was sitting.

- (144) *Tasa hipquij hipi ih-yaa hihi.*
 cup DEM.PROX.sit one's.own 1-SBJ.NMLZ.possess DECL
 'This cup is mine.' (OPT Demonstrative_07)

Finally, the proximal attributive demonstrative in Seri can be used to modify a referent that is within close (reachable) proximity to the speaker, but distant and barely visible to the addressee. This is illustrated in (145) where the speaker was referring to a book that was next to them but was away from and barely visible to the addressee.

- (145) *¿Ha-p-aspoj hipquih ih-acaaitom in-t-amzo?*
 SBJ.NMLZ-PASS-write DEM.PROX.UNSPEC INF-read 2-INTERR-want
 'Do you want to read this book (lit. what was written)?'
 (MLA WilkinsQuestionnaire 6)

The attributive demonstratives in Seri, which have been said to encode medial proximity, can be used in the following ways. In a situation where the speaker was telling the addressee, who was sitting next to the speaker, that they had a fly on their body, without using any pointing, the speaker used such a demonstrative. This is illustrated with the noun phrase *xcoomoj tiquij* 'that fly' in example (146).

- (146) *Xcoomoj tiquij mi-sil i-yat cop i-ti*
 fly DEM.MED.sit 2.POSS-shoulder 3.POSS-point DEF.ART.SG.stand 3.POSS-on
y-ij.
 DP-sit
 'That fly is on top of your shoulder.' (MLA WilkinsQuestionnaire 5)

Another situation in which a speaker can use a medial attributive demonstrative is if the speaker and addressee are standing together on one end of a field around the size of a soccer field, another person is on the opposite side of the field with a ball in front of them – in order to talk about the ball that is in front of the third participant, speakers can use a medial demonstrative adjective. The ball was visible to both the speaker and the addressee and there was no pointing during this utterance. This is illustrated with the noun phrase *ziix coqueht tiquij* 'that ball' in example (147).

(147) *Ziix c-oqueht tiquij qu-iipe ha.*
 thing SBJ.NMLZ-bounce DEM.MED.sit SBJ.NMLZ-good DECL
 ‘That ball (lit. thing that bounces) is good.’ (OPT WilkinsQuestionnaire 13)

In a similar situation, the speaker and addressee are on opposite ends of the soccer field and the ball is in front of the addressee and is visible to both the addressee and the speaker. This is exemplified with *ziix coqueht tiquij* ‘that ball’ in (148).

(148) *¿Ziix c-oqueht tiquij me n-yaa-ya?*
 thing SBJ.NMLZ-bounce DEM.MED.sit 2 2- SBJ.NMLZ.possess-INTERR
 ‘Is that ball yours?’ (MLA WilkinsQuestionnaire 16)

In completing a referential communication task involving hand-sized novel objects (see the Novel Objects task which is described in Chapter 3), speakers occasionally used attributive demonstratives to refer to parts of the novel objects. In particular, the speaker used *ticop* ‘that (medial, standing)’ in (149) to modify the noun phrase used to refer to the corner of the novel object that was being used as part of the task in order to tell the addressee where to put the red sculpting clay. Both the speaker and the addressee had the same object in front of them, but the speaker’s object had pieces of different colored molding clay and the addressee’s had no molding clay.

(149) *C-heel quih co-m-p-ataait*
 SBJ.NMLZ-red DEF.ART.SG.UNSPEC OBL-2-IRR.DEP-reach.by.accident
cõihislitx hant i-icp hac i-ic
 OBL.NMLZ.have.inner.ear land 3.POSS-side DEF.ART.SG.LOC 3.POSS-side
c-aap hant c-oom i-ti c-oom ticop
 SBJ.NMLZ-stand land SBJ.NMLZ-lie 3.POSS-on SBJ.NMLZ-lie DEM.MED.stand
coipatj taax hac i-t in-s-ih ah...
 side DEM DEF.ART.SG.LOC 3.POSS-on 2-IRR-put DECL
 ‘You are going to put the one that is red on that corner (lit. where there is a middle ear) that is in contact with the table, to the side...’
 (AIM NovelObjects_Localizations_2)

The third type of attributive demonstrative in Seri is the distal type which is used to refer to referents that are not within reachable distance to the speaker and the

addressee. This is illustrated with the noun phrase *trooqui himquij* ‘that car’ in example (150). When the speaker uttered this, the addressee was next to the speaker and the car was visible to both of them and was approximately seven meters away.

(150) *Trooqui himquij ih-yaa ihi.*
 car DEM.DIST.sit 1-SBJ.NMLZ.possess DECL
 ‘That car belongs to me.’ (OPT Demonstratives_07)

Similarly, the speaker uttered the following sentence in example (151) to an addressee which involves the noun phrase *hehe hapec himcop* ‘that tree’. The tree was visible to both the speaker and the addressee at the time of utterance and it was located approximately five meters away.

(151) *Hehe ha-p-ec himcop c-ooil iha.*
 wood SBJ.NMLZ-PASS-plant DEM.DIST.stand SBJ.NMLZ-grue DECL
 ‘That tree (lit. wood that was planted) is green.’ (OPT Demonstratives_07)

Another example of a distal demonstrative adjective is given in (152) with *hapaspoj himquih* ‘that book’. In this case, the book was equidistantly located between the speaker and the addressee, about five paces away from either of them.

(152) *Ha-p-aspoj himquih me n-yaa-ya?*
 SBJ.NMLZ-PASS-write DEM.DIST.UNSPEC 2 2-SBJ.NMLZ.possess-INTERR
 ‘Is that your book (lit. what was written)?’ (OPT WilkinsQuestionnaire 12)

As an additional note regarding the role of distance in the attributive demonstrative system, it seems that the type of distance referred to by the three different types of demonstratives is not absolute distance. In other words, the attributive demonstratives are used with respect to proximity to and from the speaker and/or addressee, but the level of proximity seems to vary. For instance, medial attributive demonstratives can be used even if the referent of the nominal that occurs with the attributive demonstrative is relatively far from the speaker.

In addition to attributive demonstratives, some pronominal demonstratives also fall under the category of spatial deictic items that are entity-denoting. All of the attributive demonstratives can be used as pronominal demonstratives as well, but when they are used pronominally, the stress falls on the first syllable (Moser and Marlett 2005: 852). Additionally, there are five pronominal demonstratives that are different from the set of attributive demonstratives discussed earlier, these include: *tiix*, *taax*, *hipiix*, *hizaax* and *toc*. According to Moser and Marlett (2005: 851), *tiix* is used for proximal or distal reference for singular entities, *taax* is used for proximal or distal reference for plural entities or for reference to an event or something that is not an object, *hipiix* is used for medial reference for singular entities, and *hizaax* is used for medial reference for plural entities and for reference to an event or something that is not an object. The demonstrative *toc* ‘here’ will be handled in the next section on place-denoting spatial deictic items. The set of pronominal demonstratives in this list differs from the attributive demonstrative system in that it does not involve information related to the posture or movement of the referent of the antecedent of the pronoun, nor does it encode a three-way contrast in proximity. Instead, these pronominal demonstratives exhibit a two-way contrast in proximity and the terms differ depending upon the number of the antecedent of the pronoun.

In example (153) the speaker is instructing another speaker to put a piece of molding clay on an object. The speaker and the addressee each have a copy of the same object directly in front of them. The speaker uses *tiix* to refer to the piece of molding clay that was previously introduced in the discourse by indicating the color of the piece of molding clay.

(153) *Tiix mos i-hiin hac i-t in-s-ih ah.*
 DEM so 3.POSS-near DEF.ART.SG.LOC 3.POSS-on 2-IRR-put DECL
 ‘You will put this [one] near there.’ (AIM NovelObjects_Localizations_4)

The pronominal demonstrative *taax* can be used to refer to mass substances such as food, as in example (154) where the speaker refers back to *ziix hapahit* ‘food’, which was mentioned previously.

(154) ...*ziix ha-p-ahit taax c-mis cah i-miitoj,*
 thing SBJ.NMLZ-PASS-eat DEM SBJ.NMLZ-appear FOC 3;3-RP.eat.PL
taax oiitoj caha.
 DEM OBJ.NMLZ.eat.PL AUX.DECL
 ‘...and food (lit. what is eaten) like that, that is what they ate.’ (Lorenzo 6/27/06_2)

In example (155) the speaker is telling the addressee what they think is a corner. The speaker is indicating that a certain part of an object is a *cöihislitx* ‘corner’. The referent does not come from the immediate discourse context, but rather from the fact that both the speaker and the addressee are looking at instances of the same object and are trying to determine how to talk about parts of the object.

(155) *Hipiix xaha poho tiix xo cö-ih-islitx iha.*
 DEM and possibly DEM but OBL.NMLZ-?-have.middle.and.inner.ears DECL
 ‘Well, this is (possibly) a corner.’ (AIM NovelObjects_Localizations_2)

In a text where a speaker was describing the food that was traditionally eaten by Seri people, the speaker uses the pronominal demonstrative *hizaax* in example (156) in order to introduce a list of different kinds of foods that were eaten by Seri people. *Hizaax* is used in this case because its antecedent, *ziix hapahit* ‘food’, is treated as a mass entity.

(156) *Comcaac coi hantx cömiiha hac ziix*
 Seri.people DEF.ART.PL base OBL.NMLZ.toward.move DEF.ART.SG.LOC thing
ha-p-ahit hizaax c-mis quih qu-iitoj ih...
 SBJ.NMLZ-PASS-eat DEM SBJ.NMLZ-appear DEF.ART.SG.UNSPEC SBJ.NMLZ-eat.PL DECL
 ‘In old times, the Seri people ate food (lit. what is eaten) like this...’
 (Lorenzo 6/27/06_4)

The following example of *hizaax* in (157) illustrates its generic use where it does not make reference to a particular object that was previously named in the discourse. In this utterance, the speaker is referencing a specific configuration of molding clay on and around an object, asking if the configuration is correct or not. In this case, *hizaax* refers to that configuration.

(157) ¿*Hizaax* *haa-ya*?
 DEM SBJ.NMLZ.be-INTERR
 ‘Is this it?’ (AIM NovelObjects_Localizations_1)

Note that *timoca* and *tintica*, in addition to functioning as attributive demonstratives, also function as definite articles in Seri. This is not illustrated in the chart based on Moser and Marlett’s Seri dictionary, which is reproduced in Chapter 4, but they do make mention of the fact that some of the attributive demonstratives with motion semantics are used as definite articles since they seem to lose their demonstrative force in some contexts. Some examples of noun phrases that contain attributive demonstratives derived from motion verbs which function as definite articles are given in (158) with *hant ipzx tintica* ‘the arroyo’ and in (159) with *ziix hacaapxom timoca* ‘the pig’.

(158) *Hant ipzx tintica hax quih*
 land OBL.NMLZ-chipped DEM.MED.go freshwater DEF.ART.SG.UNSPEC
qu-imej iha.
 SBJ.NMLZ-flow DECL
 ‘The water is flowing in the arroyo [that is not in the mountain].’
 (OPT Landscape 12/9/08)

(159) ...*ziixha-caapxom timoca an*
 thing SBJ.NMLZ-fatten.PASS DEM.MED.come 3.POSS.in
i-t-aa ma...
 3;3-REAL.DEP-pass.by DS
 ‘...the pig (lit., thing that has been fattened) is passing it [between the two trees]...’
 (FMT M&T 2-1)

5.4.2 Place-denoting spatially deictic words

Some of the attributive demonstratives in Seri refer to places. In particular, attributive demonstratives that are derived from the verb *caahca* ‘be (located)’ and are in the same paradigm as the definite article *hac* are used to modify nominals that refer to places.

These demonstratives include *hizac* ‘this’ (proximal), *tahac* ‘this’ (medial) and *himcac* ‘that’ (distal), each of which can also be used pronominally to refer to places. The pronominal demonstrative *toc* ‘there’ is an additional place-denoting demonstrative in Seri.

In example (160) the ground nominal in the first clause is *hizac*, which indicates the initial location of the fly before it landed on the addressee. When the speaker said this, the addressee was sitting next to her, within reaching distance.

- (160) *Xcoomoj quih* ***hizac*** *i-ti* *qu-ij,* *cmaax me*
 fly DEF.ART.SG.UNSPEC DEM 3.POSS-on SBJ.NMLZ-sit now 2
mi-ti *hant* *y-aait...*
 2.POSS-on land DP-land
 ‘The fly was here, now it landed on you...’ (MLA Wilkins Questionnaire 4)

Another pronominal demonstrative, *tahac*, is exemplified as the ground nominal in the final clause that is provided in example (161). In the context of this utterance the speaker was talking about how people used to leave from the Seri village of El Desemboque to a camp on Tiburon Island called *Heeme* in order to look for food. It is unclear why *tahac* was used here to refer to *Heeme* and not *himcac*, the distal pronominal demonstrative.

- (161) ...*taax moosni* *xah zixcam coi* *i-ti* *cöi-s-quinol*
 DEM black.sea.turtle and fish DEF.ART.PL 3.POSS-on OBL-IRR-have.arm
taax t-aahca *x,* ***tahac*** *ano* *m-qu-ij.*
 DEM REAL.DEP-be.LOC UNSPEC.TIME DEM 3.POSS.in RP-UNSPEC.SBJ-sit
 ‘...sea turtles and fish were looked for and that’s how it was when people were there.’ (Lorenzo 6/27/06_1)

In example (162) the speaker is referring to a particular cave that is not visible to her or to the addressee. The cave would take multiple hours to reach by foot. In this case, the speaker uses the demonstrative attributively to refer to a particular cave. The reason that *himcac* is used as opposed to one of the other attributive demonstratives is not because the cave is considered to be a place, but rather because the cave is conceptualized as a spatial region that is like a void.³⁹

(162) *¿Zaaj himcac ano n-t-afp?*
 cave DEM 3.POSS.in 2-INTERR-arrive
 ‘Have you been to that cave?’ (MLA Wilkins Questionnaire 24)

The pronominal demonstrative *toc* is the ground nominal in (163), indicating that there is a chair in the picture that the speaker is looking at. This example was taken from recordings made during a session of two speakers completing the Ball and Chair picture task. In this task, the speaker and the addressee each have a set of 12 pictures in front of them, but are separated by a screen so that they cannot see each other. The speaker chooses a photograph to describe and the addressee’s job is to pick the picture that the speaker is describing.

(163) *Hehe i-ti i-qu-iicolim zo toc t-ij ma...*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ.sit.PL INDEF.ART DEM REAL.DEP-sit DS
 ‘There is a chair (lit. wood on which one sits) there...’ (AIM B&C 1-3)

It is unclear at this point whether the use of *toc* is determined by proximity as with the other place-denoting demonstratives discussed above.

For an additional example of a demonstrative used in a place-denoting manner, see the instance of the demonstrative pronoun *taax* in the clause *taax hac it insih* ‘you will put it there’ in example (149).

³⁹ For more discussion on the selection restrictions of *himcac*, see the discussion on selection restrictions of the definite articles, in particular the definite article *hac*.

5.4.3 Path-denoting spatially deictic words

Another type of deictic expression is words or groups of words that are path-denoting. In particular, examples of such expressions are those whose interpretation relies on deictic information regarding the direction of movement of an entity, for instance, movement away from or toward deictic center. Such an expression is illustrated in (164) and (165) with the verb *moca* ‘move toward’. This verb is interpreted by default as movement from a particular location, indicated by the ground phrase, toward deictic center.

(164) *Cmiique z iizax qui j i-ti moca*
seri.person INDEF.ART moon DEF.ART.SG.sit 3.POSS-on toward.SBJ.NMLZ.move
ha.
DECL
‘A person is coming from the moon.’ (AIM EnterExitVerbs) (e.g., an astronaut)

(165) *jMoha!*
toward.move.IMPER
‘Come [here]!’ (AIM EnterExitVerbs)

Further examples of *moca* are provided in the previous discussion on motion event descriptions in Seri in (120) and (121). In section 5.3 there is further discussion of the way that path is expressed in Seri as well as the role of directionality. While *moca* ‘move toward’ encodes a particular direction of movement, *-iin* ‘go’ does not necessarily encode direction, as was shown with examples (114), (118) and (119).

5.5 Spatial frames of reference

Frames of reference (FoRs) are coordinate systems that are used to specify the location of objects with respect to other objects located in space (Piaget and Inhelder 1956; Levelt 1984, 1996; Carlson-Radvansky and Irwin 1993). The following discussion of frames of reference utilized in Seri will primarily rely on a typology of FoRs that distinguishes three types: intrinsic, relative and absolute (Levinson 1996, 2003). Intrinsic FoRs are

object-centered coordinate systems in which the geometrical or functional structure of the ground is projected onto space (e.g., if there is a garbage can closest to the part of the car where the headlights are and it is said to be ‘in front of the car’). Relative FoRs are observer-centered systems in which the geometrical structure of the observer’s body is projected onto the ground object (e.g., if a garbage can is said to be ‘in front of the car’ when the speaker is facing the car and the can is between the speaker and the car). Finally, in absolute systems, absolute bearings are projected onto the ground object (e.g., when the can is said to be ‘north of the car’, the description neither depends on the observer’s perspective nor on the orientation of the ground, the car). These three FoRs type can be grouped as observer-based or “egocentric” (relative) and non-observer based or “allocentric” (intrinsic and absolute).

To more readily account for the variation in the data, I use a revised version of this typology based on Danziger (in press) and Bohnemeyer (ms). Danziger’s typology consists of a four-way, as opposed to a three-way, distinction in spatial frames of reference: intrinsic, relative, absolute and direct. This four-way distinction is best explained using the notion of “anchor”, which was first introduced within this context in Levinson 1996. The anchor is an entity or event that introduces a spatial asymmetry from which the axes of the coordinate system or FoR are abstracted. With relative frames of reference, the anchor is the observer’s body but ground and anchor are different (e.g., with a relative interpretation of the utterance provided in (166).

(166) *The ball is to the left of the car.*

The region denoted by *left of the car* is projected by correspondence to the left side of the observer’s body). In the case of absolute frames of reference, the anchor is an

environmental gradient such as the slope of a mountain, the flow of a waterway or the points on the horizon where the sun rises and sets as is illustrated with the utterance in (167), where the absolute bearings are given by a cardinal direction system.

(167) *The ball is north of the car.*

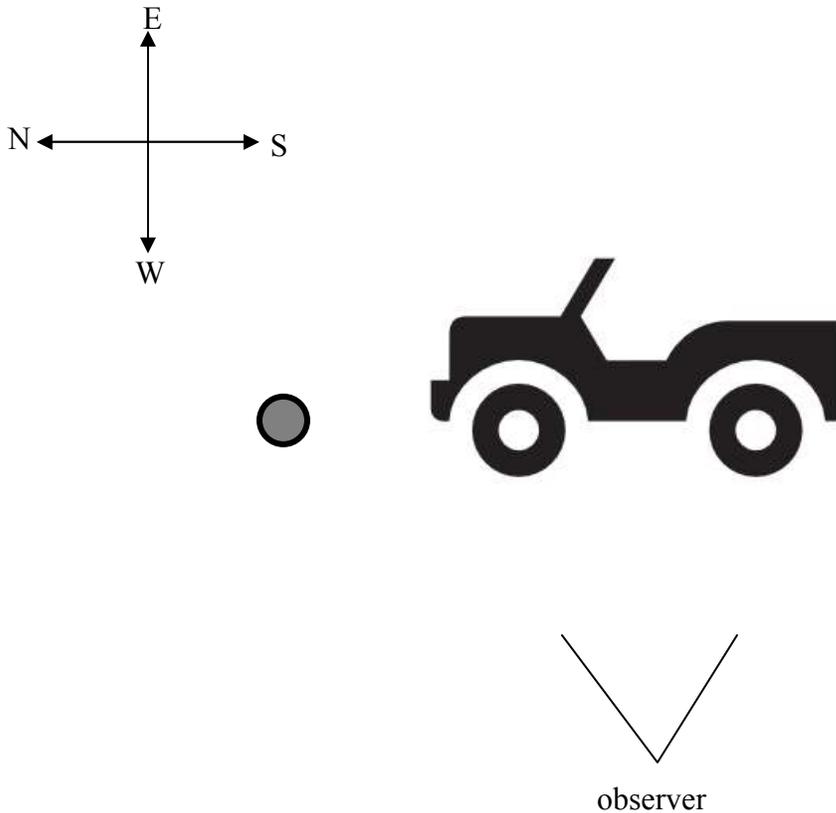


Figure 1. Depiction of scene described in (166) and (167).

For an intrinsic frame of reference, the anchor is the ground entity (e.g., with an intrinsic interpretation of the utterance in (168)).

(168) *The ball is behind the car.*

The car is both the ground of the description (and therefore the origin of the frame of reference) and the anchor on whose geometry the frame of the reference is modeled).

Finally, with direct frames of reference, both anchor and ground are the observer's body as is shown in (169).

(169) *The ball is on my right.*

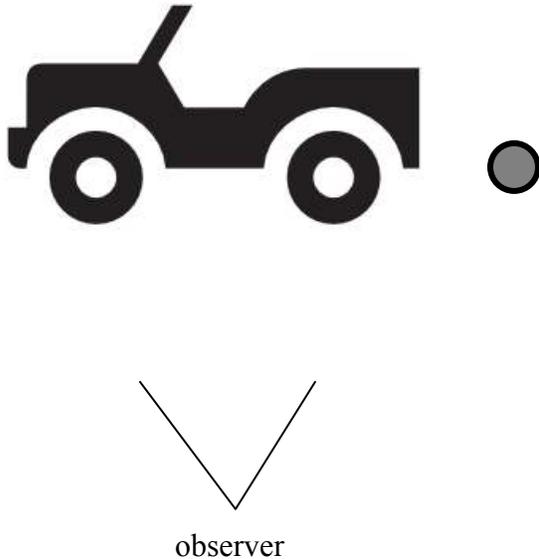


Figure 2. Depiction of scene described in (168) and (169).

This leads to the following contrasts:

- a. the anchor is (intrinsic) vs. is not (extrinsic) the ground
- b. anchor is (egocentric) vs. is not (allocentric) the body of the observer

Danziger proposed changes to the frame of reference typology discussed above.

The proposed changes primarily have to do with differences in the definition of what constitutes an intrinsic system. An intrinsic system, following Danziger, is very similar to a direct system in that in both systems the anchor is the ground entity, but in an intrinsic system the anchor is different from the body of the observer, while in a direct system it is the body of the observer. This revised typology of FoRs is illustrated below using the contrasts listed above:

Absolute: allocentric and extrinsic
Relative: egocentric and extrinsic
Intrinsic: allocentric and intrinsic
Direct: egocentric⁴⁰ and intrinsic

I would like to further distinguish between absolute frames of reference and landmark-based frames of reference.⁴¹ In landmark-based systems, the anchor is a particular landmark, such as a town or a prominent building like a church, or in some cases a mountain or a river. The axes of landmark-based systems are defined in one of two ways: they are either projected onto the ground (the figure in orientation descriptions) from an environmental gradient such as a mountain slope or the direction in which a river flows, or they are defined as vectors pointing towards an environmental feature, such as the place on the horizon where the sun rises or sets. In the case of absolute systems, the axes of the FoR are then treated as fixed for the entire universe regardless of the position of the observer vis-à-vis the anchor, i.e., the environmental entity or feature. In the case of a mountain slope system, the same axes of the FoR are labeled ‘uphill’ and ‘downhill’ even on the other side of the mountain (with respect to the location of the community in which the terms were abstracted), where the actual direction of the slope reverses. This type of system is exemplified in the way that Tseltal speakers have been said to describe the location of one bottle located on a flat table oriented north-south as to be ‘downhill’ from another, even though there was no actual incline at play (Brown and Levinson 1993). In the case of a horizontal solar coordinate system, abstraction refers to the fact that the direction denoted by terms such as ‘east’ and ‘west’

⁴⁰ Note that this involves an updated definition of an egocentric frame of reference, as opposed with what was introduced in the beginning under the context of a three-way frame of reference typology.

⁴¹ Much of the discussion of the four-way contrast in frames of reference stems from unpublished material produced by Jürgen Bohnemeyer pertaining to the coding of spatial frames of reference of the Ball and Chair picture series in the context of the NSF-funded research project “Spatial language and cognition in Mesoamerica” (NSF Award No. BCS-0723694).

is understood to be the same everywhere, regardless of where the sun actually rises and sets in that particular place, and at any time, regardless of where on the horizon the sun actually rises and sets at that particular time.

In order to summarize the FoRs typology that will be used to discuss the Seri data, the following section presents descriptions of the five FoR types: intrinsic, direct, relative, absolute and landmark-based. The data was collected using two different tasks, the Men and Tree pictures and the Ball & Chair pictures, which are both discussed in Chapter 3. I got comparable results from both tasks.

An intrinsic frame of reference involves a coordinate system that is centered on an object. The axes are determined by parts of the ground. The anchor is the ground and is different from the body of the observer. Spatial relators that are interpreted with respect to such coordinate systems typically name a part of the ground, at least etymologically (Levinson 2003: 41-43). For instance, the interpretation of the English utterance in (170) can involve an intrinsic frame of reference,⁴² where *in front of* refers to a part of the television, namely the front, which for English speakers is canonically the side that has a screen that people watch.

(170) *The ball is in front of the television.*

In the revised FoRs typology used here, as mentioned above, the intrinsic FoR is distinguished from the direct FoR in that the anchor is not the body of the observer, whereas in the direct FoR it is.

⁴² This English utterance also has a possible interpretation that involves a relative frame of reference, but in this case I am referring to the interpretation involving an intrinsic frame of reference where the front of the television is interpreted as being a functional part of the television – the part that displays the picture. This would contrast with the interpretation involving a relative frame of reference which would refer to the front of the television as the part of the television that is facing the observer (since the anchor would be the observer's body and not the ground).

A direct frame of reference is an observer-based system in that the anchor is the observer's body, as well as the ground entity. As mentioned above, this type of FoR differs from an intrinsic FoR in that the intrinsic FoR is object-centered. An example of a direct FoR in English would be *The ball is on my left*, where *left* (meaning left side of the observer) is the anchor and the ground. This differs from a relative FoR in that in a relative FoR the anchor is not the ground entity.

A relative frame of reference involves a coordinate system that is anchored to the body of an observer. In this case, the ground object has to be distinct from the body of the observer. Relative coordinate systems that are based on a viewer viewpoint generally seem to be based on planes through the human body, which results in contrasts between 'up'/'down', 'front'/'back' and 'left'/'right'. This type of system can be centered on the human spine or the main axis of the body to provide different kinds of contrasts. The mapping can involve different types of transformations: 180 degree rotation, translation (which involves movement without rotation or reflection) or reflection across the frontal transverse plane (Levinson 2003: 43-44, 84-88; Weissenborn and Klein 1982: 5-6). Under a rotational interpretation, the English utterance in (171) requires a shift of the coordinates from the observer onto the tree and then the coordinates are rotated 180 degrees, such that the tree has a left and right hand side, as if its front were facing the observer.

(171) *Eduardo is to the left of the tree.*

This means that left of the tree is really the observer's right. Under a translational interpretation (also known as the Hausa system), the English utterance in (172) requires a translation of the observer's axes onto the tree with no rotation such that this description

would be accurate for a case where the observer were facing the tree and the tree were in between the observer and Eduardo.

(172) *Eduardo is in front of the tree.*

If this same configuration were described with a rotational interpretation Eduardo would be said to be behind the tree. Under a reflection interpretation, the English utterance in (173) requires that the front of the table is reflected from the front of the observer onto the table, meaning that in the configuration described Eduardo is in between the observer and the table.

(173) *Eduardo is in front of the table.*

The absolute frame of reference involves an anchor that is an environmental gradient and is different from the ground object. An absolute FoR involves the set of bearings that are abstracted from the environmental gradient. One basic and possibly universal instance of an absolute frame of reference is provided by gravity in the vertical dimension. However, since this instance of an absolute frame of reference occurs in most, if not all languages, I will concern myself here with instances of absolute frames of reference as they exist in the horizontal dimension.⁴³ The kinds of fixed bearings that are involved in absolute frames of reference can include items such as cardinal directions (i.e., sunrise and sunset), the stars, wind directions, or other environmental gradients such as mountains slopes or direction of the flow of a river. Speakers of languages that utilize absolute frames of reference might describe a configuration of a man being in front of a television as in (174) or (175).

(174) *The man is to the north of the television.*

⁴³ This is the case with the entire discussion of spatial frames of reference here – I am only concerned with descriptions of objects in space which utilize a frame of reference that involves the horizontal dimension, as opposed to the vertical one.

(175) *The man is upriver of the television.*

English speakers utilize absolute frames of reference when providing directions in large-scale space, as opposed to locating objects in small-scale space. For instance, to indicate the location of Tucson, Arizona with respect to Phoenix, Arizona, an English speaker would say the utterance provided in (176). However, it would be unnatural for most (but not all) English speakers to say the utterance in (177)

(176) *Tucson is south of Phoenix.*

(177) *The chair is east of the table.*

Landmark-based frames of reference are similar to absolute systems, in that the anchor, in both cases, is the actual landmark, but landmark-based systems do not involve abstraction from an environmental gradient or landmark. In the case of Seri, as is illustrated below, the system involves ad-hoc landmarks, depending upon the context or setting of the discourse. For example, if speakers are discussing the location of objects while in the village, they might use village-specific landmarks such as the church or individual's houses as landmarks. However, outside of the village, they might use placenames of prominent places as ad-hoc landmarks.

In addition to synthesizing the typologies of frames of reference by Danziger (in press) and Levinson (1996), Bohmeyer (ms.) contributes to the typology by introducing the distinction between frames of reference involved in the interpretation of place functions and frames of reference involved in the interpretation of 'vectors'. Vectors are semantic/conceptual functions that map entities into their orientation or direction of motion at any given moment. The values of these functions can be defined in terms of ordered pairs of places – the heads and tails of the vectors – or in terms of pairs

of places (either heads or tails) and angles (see Bohnemeyer 2003 and references therein). Vectors correspond to ‘directional’ path functions in Jackendoff’s (1983) framework. There are, however, a number of factors that suggest, contra Jackendoff, that vectors should not be treated as a type of path functions: First, as Jackendoff acknowledges, they are not restricted to motion events, and when they are applied to motion events, they do not render the event description bounded or telic, unlike true path functions (e.g., *Floyd moved towards the bar* does not entail that Floyd reached the bar). Beside this, and of particular interest for present purposes, vectors occur with a different range of possible types of frames of reference than path functions. For example, intrinsic frames of reference cannot be used to describe the orientation of entities at all, as can be illustrated with the utterance provided in (178) where the orientation of the figure object, the ball, and the ground object, the chair, are not given.

(178) *The ball is behind the chair.*

Utterances involving an intrinsic frame of reference can in only a very limited sense describe objects’ direction of motion (motion ‘forward’, ‘backward’, and ‘sideways’ can be interpreted intrinsically) – and in this case, it is the geometry of the figure, rather than that of the ground, that defines an intrinsic frame of reference. In previous discussions of frames of reference (see, for example, Pederson et al. 1998) there have been distinctions made between expressions which involve a frame of reference that contain either ‘facing information’ or ‘standing information’. This distinction can also be described as one between place functions and vectors.

Vectors have a tail and a head which are entities, or more specifically, places that are defined by entities. For instance, in the utterance in (179), the front semiaxis of the chair aligns with a vector whose head is where the ocean is.

(179) *The chair is facing the ocean.*

To reverse the sense of the vector one can insert *away from* after *facing* in example (179). Adding *away from* consequently reverses the role of which entities serve as the head and the tail of the vector.

To collect data on the preferred linguistic frames of reference used when describing the locations of objects in table-top space in Seri, I utilized two different photo-to-photo matching stimuli: the Men and Tree picture series (Danziger 1992) and the Ball and Chair picture series (Bohnenmeyer 2008a), which are both described in more detail in Chapter 3. The data collected from these picture series show that when Seri speakers describe the location of objects in small-scale space, they use all five frame of reference types, but seem to show a preference for the direct frame of reference as well as a landmark-based system. The absolute frame of reference seems to be restricted to use by older speakers, but is comprehended by speakers regardless of age.

5.5.1 Landmark-based frame of reference

One of the frames of reference that Seri speakers used to complete the Men and Tree task and the Ball and Chair task is a landmark-based system. This kind of system is also used to describe the location in large-scale space as well as small-scale space. This system is based on ad-hoc landmarks. These landmarks can be places referred to by a placename, such as villages or towns, as well as geographic entities such as the sea or the desert. Seri speakers also use such landmarks as the local church building or a neighbor's house. The

use of a landmark-based FoR is not constrained by whether speakers are indoors or outdoors or whether or not the landmark is visible – the same landmarks are used in any of these contexts. The choice of landmarks appears to be based on the availability of prominent landmarks that are near to the location of the discourse event and in some cases, familiar to the speaker and addressee. The landmarks which are frequently used as geographic landmarks are listed in Table 8.

Name of the landmark	Gloss	Additional information
<i>Socaaix</i>	‘Punta Chueca’	Seri village downshore of <i>Haxöl Iihom</i> ‘El Desemboque’
<i>Xpanohax</i>	‘Puerto Libertad’	refers to area where there is freshwater coming from the ocean floor upshore of <i>Haxöl Iihom</i> ‘El Desemboque’, also used to refer to a Mexican fishing village
<i>Hezitim</i>	‘Hermosillo’	Large Mexican city that is southeast of <i>Haxöl Iihom</i> ‘El Desemboque’
<i>xepe com</i>	‘ocean’	
<i>heen(o)</i>	‘desert’	
<i>hant ipzx</i>	‘arroyo’	not a placename, but generally refers to the Rio del San Ignacio, the nearest dry riverbed to <i>Haxöl Iihom</i> ‘El Desemboque’

Table 8. Some of the more frequent geographic landmarks that are used as geographic coordinates

In utterances that use a geographic landmark as part of a spatial frame of reference, the landmark acts as the ground-denoting object. The ground-denoting nominal is preceded by the spatial relational noun *-icp* ‘side’. The use of a geographic landmark is illustrated in example (180) with *Hezitim quij iicp hac* ‘side of Hermosillo’. In this example the orientation of the chair is indicated with the verb form *iiqui tiizc* ‘facing’, which encodes a vector function. The head of the vector is in the direction of the ground entity, namely, *Hezitim* ‘Hermosillo’.

(180) *Hehe i-ti i-qu-iicolim quij cmaax... Hezitim*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit now Hermosillo
quij i-icp hac i-iqui t-iizc
 DEF.ART.SG.sit 3.POSS-side DEF.ART.SG.LOC 3.POSS-toward REAL.DEF-face
ma, ziix c-oqueht quij pti i-icot
 DS thing SBJ.NMLZ-bounce DEF.ART.SG.sit each.other 3.POSS-between
hac ano t-ijj...
 DEF.ART.SG.LOC 3.POSS.in REAL.DEF-sit
 ‘Now the chair (lit. wood on which on sits)... it is facing Hermosillo, the ball (lit. thing that bounces) is in the middle...’ (OPT B&C 4-4)

Example (181) also illustrates an utterance that involves a landmark-based FoR where the landmark is specified in the ground phrase *heen iicp hac* ‘side of the desert’. This utterance also involves a vector encoded by the same verb stem as in example (180), but in this case the landmark, which specifies the place the vector is pointing toward, is not a town, but a larger spatial region, namely, the desert.

(181) *Haqui hac i-iqui qu-iizc-ya mos?*
 where DEF.ART.SG.LOC 3.POSS-toward SBJ.NMLZ-face-INTERR again
Heen i-icp hac i-iqui qu-iizc.
 desert 3.POSS-side DEF.ART.SG.LOC 3.POSS-toward SBJ.NMLZ-face
 ‘Where is it [the chair] facing? It is facing the desert.’
 (MLA B&C 4-9)

Another example of an utterance involving a landmark-based frame of reference can be found in (182) with *xepe com iicp hac iic* ‘by the side of the sea’. This utterance does not involve a vector, but rather it involves a place-based system where the speaker divides up space as either being on the side of the sea or being on the side of the desert. The well that the speaker is locating is on the sea side of the spatial region they had already narrowed down in the previous context.

(182) ...*xepe com i-icp hac i-ic c-aahca*
 sea DEF.ART.SG.lie 3.POSS-side DEF.ART.SG.LOC 3.POSS-by SBJ.NMLZ-be.LOC
hac taax hax zo ano
 DEF.ART.SG.LOC DEM freshwater INDEF.ART 3.POSS.in
i-m-iih hi.
 OBL.NMLZ-NEG-be.LOC DECL
 ‘...it is on the side of the sea, that one [well] does not have water in it.’
 (GHF 7/26/06 2 3)⁴⁴

A similar type of utterance as that provided in examples (182) can be found in example (183), but in this case the ground phrase is *Socaaix iicp hac iic* ‘side of Punta Cheuca’. The similarity arises in the partitioning of space that is exhibited in both examples. This example comes from the Men and Tree task where speakers were describing and matching pictures which feature different configurations of toy men and toy trees. In this case, the speaker seems to implicitly be using the photograph as a ground object and is partitioning the photograph into spatial regions – one side that is on the side of Punta Cheuca and one side that is on the side of Puerto Libertad.

(183) *Hehe cop Socaaix i-icp hac*
 wood DEF.ART.SG.stand Punta.Cheuca 3.POSS-toward DEF.ART.SG.LOC
i-ic c-aap iha.
 3.POSS-by SBJ.NMLZ-stand DECL
 ‘The tree is on the side of Punta Cheuca.’ (OPT MaT 2-5)

Example (184) provides an example of a ground phrase that contains the placename for Puerto Libertad, with *Xpanohax iicp hac iicp* ‘side of Puerto Libertad’. Similar to example (183), the utterance in example (184) illustrates another instance where the speaker is likely using the photograph as a ground object and partitioning it into two sides – the Puerto Libertad side and the Punta Cheuca side. In this case, however, the speaker uses a path verb *moca* ‘move toward’ to describe the orientation of the man in the

⁴⁴ This example is not from the discourse resulting from the Men and Tree task or the Ball and Chair task, but rather was taken from a description of where a person can find fresh water near the town of El Desemboque del Rio San Ignacio, Sonora, Mexico.

photograph. Here the tail of the vector of the path is specified by the spatial region that is said to be on the Puerto Libertad side.

(184)...*ctam c-azooj timoca Xpanohax*
 man SBJ.NMLZ-use.walking.stick DEM.MED.come Puerto.Libertad
i-icp hac i-icp moca ha.
 3.POSS-side DEF.ART.SG.LOC 3.POSS-side toward.SBJ.NMLZ.move DECL
 ‘...the man with the walking stick is coming from the side of Puerto Libertad.’
 (OPT MaT 2-2)

Additionally, Seri speakers make use of ad-hoc local landmarks, especially to locate objects in small-scale space.⁴⁵ For example, one speaker made reference to the church, *iglesia cop* (a Spanish loanword), in the village, which is illustrated in (185). Similar to the descriptions in (183) and (184), the example below provides another instance where the speaker seems to be using the photograph as a ground object and partitioning the photograph into two spatial regions, one is on the side of the church (which is, in this case, synonymous with being on the side of Puerto Libertad).

(185)*Hi-iqui t-ipac ma, ziix c-oqueht quij*
 1.POSS-toward REAL.DEP-back DS thing SBJ.NMLZ-bounce DEF.ART.SG.sit
hant com i-ti t-ij ma, haptco mos iglesia
 land DEF.ART.SG.lie 3.POSS-on REAL.DEP-sit DS already so church
cop i-icp hac i-icp t-ij...
 DEF.ART.SG.stand 3.POSS-side DEF.ART.SG.LOC 3.POSS-side REAL.DEP-sit
 ‘It [the chair] has its back to me and the ball (lit. thing that bounces) is on the ground, again it is on the side of the church...’ (OPT B&C 2-12)

Another type of local ad-hoc landmark used by Seri speakers is houses located near to the location of a speech event. This is illustrated with the ground object *Garas quih yaaco cop* ‘Garas’ house’ in example (186). This is another instance of the speaker using the photograph as a ground object and partitioning it into two sides – one of the sides is on the same side as Garas’ house.

⁴⁵ This FoR is not, however, unique to the tasks used to collect data on FoR preferences in Seri.

(186) *Hehe* *i-ti* *i-qu-iicolim* *quij* *hi-iqui*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit 1.POSS-toward
t-iizc *ma, ziix* *c-oqueht* *quij* *Garas*
 REAL.DEP-face DS thing SBJ.NMLZ-bounce DEF.ART.SG.sit Garas
quih *y-aaco* *cop* *i-icp*
 DEF.ART.SG.UNSPEC 3.POSS-house DEF.ART.SG.stand 3.POSS-side
hac *i-icp* *y-ijj.*
 DEF.ART.SG.LOC 3.POSS.-side DP-sit
 ‘The chair (lit. wood on which one sits) is facing me and the ball (lit. thing that bounces) is on the side of Garas’ house.’ (OPT B&C 4-7)

Like an absolute frame of reference, a landmark-based frame of reference is an allocentric or object-centered system. The question then arises as to why the use of geographic landmarks in Seri instantiates a frame of reference that is distinct from an absolute frame of reference. In this case, Seri speakers employ an ad-hoc system of geographic landmarks, which is primarily based on the axes of upshore vs. downshore and seawards vs. desertwards. They also use other local landmarks, as mentioned above, like the village church, people’s houses or other prominent places near to or relevant to the discourse. In other words, the use of geographic landmarks in Seri is not an abstract system the way that an absolute system is. More specifically, Seri speakers have not taken the axes just discussed and generated an abstract coordinate system from them in a way that is for instance, comparable with what Tseltal speakers of Tenejapa do with the uphill vs. downhill axis (for more discussion of this see Brown and Levinson 1993).

5.5.2 Direct frame of reference

Seri speakers also used a direct frame of reference when describing the Ball and Chair photos and the Men and Tree photos. One way in which a direct frame of reference is used is in describing the location of the ball in the Ball and Chair photos where the

anchor and the ground are the observer's body. For instance, in example (187) the ball is located with respect to the observer's body, on the observer's left.

- (187) ...*hi-islic* *i-icp* *hac* *ziix* *c-oqueht* *quij*
 1.POSS-left 3.POSS-side DEF.ART.SG.LOC thing SBJ.NMLZ-bounce DEF.ART.SG.sit
i-ti *m-ijj.*
 3.POSS-on RP-sit
 '...the ball (lit. thing that bounces) is on my left.' (AIM B&C 2-4)

However, Seri speakers also used a direct frame of reference involving vectors, as opposed to place functions. In example (188) the term *hisliic iicp hac* 'my left' is used in order to specify the direction that the figure object is facing, which corresponds with the head of the vector.

- (188) *Hehe* *i-ti* *i-qu-iicolim* *quij* *he* *hi-sliic*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit 1 1.POSS-left
i-icp *hac* *i-iqui* *qu-iizc* *ih.*
 3.POSS-side DEF.ART.SG.LOC 3.POSS-toward SBJ.NMLZ-face DECL
 'The chair (lit. wood on which one sits) is facing my left.' (AIM B&C 1-3)

Similarly, in (189) *hisliic iicp hac* 'my left' describes the direction toward which the sticks that the men are holding are facing. The head of the vector corresponds with the orientation of the observer's body, specifically, their left hand side.

- (189) *Cmaacöl* *c-azoolcoj* *quih* *c-oocj*
 man.PL SBJ.NMLZ-use.walking.stick.PL DEF.ART.SG.UNSPEC SBJ.NMLZ-two
pte *c-omtxö* *hi-sliic* *i-icp* *hac*
 each.other SBJ.NMLZ-straight 1.POSS-left 3.POSS-toward DEF.ART.SG.LOC
i-iqui *qu-iizjoj* *iha.*
 3.POSS-toward SBJ.NMLZ-face.PL DECL
 'Two men with walking sticks who are in a straight line are facing my left.'
 (AIM MaT 3-2)

In the two examples above, the direction of the head of the vector is specified with respect to the observer's body, which serves as facing direction of the figure objects.

5.5.3 Intrinsic frame of reference

There are also some instances of Seri speakers using an intrinsic frame of reference in responses to the Men and Tree and Ball and Chair picture series.⁴⁶ An intrinsic frame of reference is used by referring to a part of the ground object in order to provide the location of the figure object. In this case, the anchor is the ground and not the body of the observer. In example (190) the front of the chair is referred to by the body part term *-een* ‘face’.

(190) *Hi-islic* *i-icp* *hac* *c-oocta* *ha,* *ziix*
 1.POSS-left 3.POSS-side DEF.ART.SG.LOC SBJ.NMLZ-look.at DECL thing
c-oqueht *quij* *ox* *yeen* *i-icp* *hac*
 SBJ.NMLZ-bounce DEF.ART.SG.sit thus 3.POSS.face 3.POSS-side DEF.ART.SG.LOC
ah *i-ti* *m-ij,* *coipatj* *i-icp* *hac* *i-ti*
 FOC? 3.POSS-on RP-sit side 3.POSS-side DEF.ART.SG.LOC 3.POSS-on
qu-ij *iha,* *ox* *oo* *m-pacta.*
 SBJ.NMLZ-sit DECL thus PART RP-be
 ‘It [the chair] is looking to my left and the ball (lit. thing that bounces) is in front of [the chair], to one side.’ (MLA B&C 3-12)

In example (191) the front of the chair is referred to with *yiizc* ‘its front’, literally meaning the chair’s face. The location of the ball is the region of space that is projected from this part of the chair.

⁴⁶ It was expected that descriptions involving an intrinsic frame of reference would occur more frequently in responses to the Ball and Chair picture series as opposed to the Men and Tree picture series due to the fact that the ground object in the former, a chair, has more salient inherent parts which can serve as a spatial relator in order to locate the figure object. Trees, on the other hand, lack such inherent parts or facets. At this point, there is not a significant difference in the number of responses from the Seri data that involve an intrinsic FoR in responses the Men and Tree pictures series as opposed to the Ball and Chair picture series.

(191) *Hehe i-ti i-qu-iicolim quij hi-nol*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit 1.POSS-arm
aapcoj i-icp hac i-iqui t-iizc ma,
 enormous.PL 3.POSS-side DEF.ART.SG.LOC 3.POSS-toward REAL.DEP-face DS
y-iizc hac ah ziix c-oqueht quij
 3.POSS-face DEF.ART.SG.LOC FOC? thing SBJ.NMLZ-bounce DEF.ART.SG.sit
i-ti t-ij, toox xah cö-t-ij i-ti y-ij
 3.POSS-on REAL.DEP-sit far PART OBL-REAL.DEP-sit 3.POSS-on DP-sit
i-ti qu-ij com, hant tiix ah i-ti y-ij.
 3.POSS-on SBJ.NMLZ-sit DEF.ART.SG.lie land DEM FOC? 3.POSS-on DP-sit
 ‘The chair is facing my right (lit. my enormous hand), the ball (lit. thing that
 bounces) is in front of it [the chair], it is a little far [from the chair] there it is.’
 (AIM B&C 3-1)

In example (192) the back of the chair, meaning the part that you have your back against when sitting in it, is referred to by *iiqui ipocj cop* which literally means ‘toward its carapace (or shell)’. The location of the ball with respect to the back of the chair is specified with *ipac* ‘its back’ in order to indicate that the ball is behind the back of the chair. The location is further specified with *hac* ‘its base’ in order to indicate that the spatial region is projected from the backside of the back of the chair at the base part of the chair.

(192) *Hipiix hehe i-ti i-qu-iicolim ano*
 DEM wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL 3.POSS.in
c-ooipj hi-nol aapa i-icp hac
 SBJ.NMLZ-transverse 1.POSS-arm enormous 3.POSS-side DEF.ART.SG.LOC
i-ti qu-ij i-ic t-ij ma, i-iqui
 3.POSS-on SBJ.NMLZ-sit 3.POSS-by REAL.DEP-sit DS 3.POSS-toward
i-pocj cop i-pac hac hant i-t
 3.POSS-back DEF.ART.SG.stand 3.POSS-back DEF.ART.SG.LOC land 3.POSS-base
hac ah ziix c-oqueht quij i-ti
 DEF.ART.SG.LOC FOC? thing SBJ.NMLZ-bounce DEF.ART.SG.sit 3.POSS-on
y-ij.
 DP-sit
 ‘In this one, the chair (lit. wood on which one sits) is at a 90 degree angle and the seat is on my right (lit. my enormous hand) and the ball (lit. thing that bounces) is behind the back [of the chair] and it is on the ground.’ (MLA B&C 3-11)

5.5.4 Relative frame of reference

Additionally, Seri speakers instantiate a relative frame of reference by using terms for left and right which establish a coordinate system based on the observer's body, which is then projected onto the spatial array being described. This is illustrated in example (193) with *itooa hinol aapjoj iicp hac* 'on my right side of its foot'. Although this type of frame of reference is certainly possible in Seri, it did not seem to be a preferred frame of reference in the data collected from the Man and Tree and the Ball and Chair tasks. Additionally, the use of the terms for left and right, especially when interpreted with a relative frame of reference, sometimes caused confusion between speakers.

- (193) ...*i-toaa* *hi-nol* *aapjoj* *i-icp* *hac* *i-ic*
 3.POSS-foot 1.POSS-arm enormous 3.POSS-side DEF.ART.SG.LOC 3.POSS-by
c-aap *cap* *ah,* *ziix* *c-oqueht*
 SBJ.NMLZ-stand DEF.ART.SG.stand FOC thing SBJ.NMLZ-bounce
quij *i-ti* *y-ij.*
 DEF.ART.SG.sit 3.POSS-on DP-sit
 '...on my right of its [the chair's] foot, the ball is there.' (AIM B&C 4-7)

In example (194) the ground is the chair and the anchor is the observer. The location of the ball is specified with respect to the leg of the chair, with the expression *itooa iicp hac hiic caap cap* 'the leg that is toward me'. The speaker, however, is referring to sides of the picture which are based on the orientation of the speaker and the addressee – they are sitting next to each other, side-by-side at a table. Such a system is arrived at either through reflection or translation (see discussion above) of spatial regions onto the picture which correspond to the orientation of the speaker and addressee as they are seated looking at the picture.

- (194) *Hehe i-ti i-qu-iicolim quiq i-iqui*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit 3.POSS-toward
t-ooipj ma, i-pac i-icp hac,
 REAL.DEP-transverse DS 3.POSS-back 3.POSS-side DEF.ART.SG.LOC
i-toaa i-icp hac hi-ic c-aap
 3.POSS-foot 3.POSS-side DEF.ART.SG.LOC 1.POSS-by SBJ.NMLZ-stand
cap ha, ziix c-oqueht quiq
 DEF.ART.SG.stand FOC? thing SBJ.NMLZ-bounce DEF.ART.SG.sit
*i-ti y-ij.*⁴⁷
 3.POSS-on DP-sit
 ‘The chair (lit. wood on which someone sits) is at a 90 degree angle from me and
 the ball (lit. thing that bounces) is behind [the chair] and is on the side of its leg that
 is toward me.’ (AIM B&C 2-11)

5.5.5 Absolute frame of reference

Finally, it is possible for Seri speakers to use an absolute frame of reference when describing the location of objects in small-scale space. The use of this type of frame of reference, however, is more limited than other frames of reference. An absolute frame of reference in Seri is based on the directions of different winds that occur in the Seri territory. The terms that are used in this type of frame of reference and the wind terms they are derived from are illustrated in Table 9. The terms that are used in association with an absolute FoR are derived from wind terms and they function in a similar manner to terms for cardinal directions in English, like *north*, *south*, *east*, and *west*. However, instead of a coordinate system based on terms that correspond with the location of where the sun sets and rises (east and west) and the opposing coordinates (north and south), Seri

⁴⁷ Although this example appears somewhat complex, the syntactic structure exhibited in the utterance is not an artifact of the task that was used to elicit this utterance. In fact, the strings of clauses with dependent marked verb forms with the final verb form being independent marked is representative of clause chaining construction in Seri.

speakers use a variety of terms that correspond with the direction that the different seasonal winds come from.⁴⁸

Cardinal directions	Gloss	Derived from	Gloss
<i>xnaa iicp, xnaaiicp</i>	‘toward the south’	<i>xnaai</i>	‘southwind’
<i>hai iicp</i>	‘toward the north’	<i>hai</i>	‘northwind’, ‘wind’
<i>hai heeno moca iicp</i>	‘from the mountains’	<i>hai heeno moca</i>	‘wind the blows from the mountains’
<i>happa iicp</i>	‘toward the northwest’	<i>happa</i>	‘northwest wind’
<i>hast ipac hai</i>	‘southwest’ (lit. ‘wind that comes from the back of the mountain’)	<i>hai</i>	‘northwind’, ‘wind’
<i>ano yaait iic cöihihizat</i>	‘east’ (lit. ‘toward where there is shade in the afternoon’)		

Table 9. Terms derived from the names of wind in Seri

Only two Seri speakers used this system while performing the photo-to-photo matching tasks and both were older speakers, one a man and one a woman. The male speaker was addressing another older male speaker and the female speaker was addressing one of her children who is in his 20s.

Example (195) illustrates a speaker describing the orientation of the chair with respect to the direction from which the south wind blows, *xnaiicp* ‘(toward the) south’. What this means is that the head of the vector that indicates the orientation of the chair extends to in a direction that corresponds with the location from which the south wind blows.

⁴⁸ I am assuming that this FoR differs from the ad-hoc landmark based FoR in that speakers abstract from the coordinates provided by the wind directions. However, unfortunately I do not have data illustrating that the coordinates used in this FoR are indeed abstracted. I was not able to take speakers far away from the village to run the same tasks I used to collect data on FoR preferences. I hope to be able to do this in the future to verify my claims here.

(195) *Cmaaxziix, hehe i-ti i-qu-iicolim xnaiicp hac*
 now thing wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL south DEF.ART.SG.LOC
i-iqui qu-iizc zo ziix c-oqueht zo
 3.POSS-toward SBJ.NMLZ-face INDEF.ART thing SBJ.NMLZ-bounce INDEF.ART
yeen i-icp hac i-ti y-ij, xo hai
 3.POSS.face 3.POSS-toward DEF.ART.SG.LOC 3.POSS-on DP-sit but wind
cop ano cola qu-ij ano cola
 DEF.ART.SG.stand 3.POSS.in high SBJ.NMLZ-sit 3.POSS.in high
qu-ij iha.
 SBJ.NMLZ-sit DECL
 ‘Now the chair (lit. wood on which one sits) is facing toward the south and the ball
 (lit. thing that bounces) is in front [of it] and it [the ball] is in the air.’
 (MLA B&C 4-10)

Example (196) provides an additional instance of a speaker using an absolute frame of reference to indicate the orientation of the chair. In this description the orientation of the chair is indicated with respect to the direction that the south wind blows, which is indicated with the expression *xnaai icp* ‘(toward the) south’.

(196) *Hehe i-ti i-qu-iicolim zo xnaaiicp*
 wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL INDEF.ART south
xnaai cop i-icp hac i-iqui
 southwind DEF.ART.SG.stand 3.POSS-side DEF.ART.SG.LOC 3.POSS-toward
qu-iizc i-pac ziix c-oqueht z
 SBJ.NMLZ-face 3.POSS-back thing SBJ.NMLZ-bounce INDEF.ART
i-ti y-ij.
 3.POSS-on DP-sit
 ‘A chair (lit. wood on which one eats) is facing toward the south and there is a ball
 (lit. thing that bounces) behind it.’ (MLA B&C 4-2)

The description that is provided in example (197) illustrates another instance of *xnaiicp* ‘(toward the) south’, but in this case the direction that is specified by the wind term corresponds to the direction of the head of the vector that indicates the direction of the face of the toy man that is in one of the photos in the task. This example indicates that the toy man is facing toward the direction from which the south wind blows.

(197) ...*tiix hizeecp himcac xnaiicp hac*
 DEM other.side there.DIST south DEF.ART.SG.LOC
i-iqui s-iizc.
 3.POSS-toward IRR-face
 ‘...that one on the other side, there, it will be facing toward the south.’
 (FMH MaT 4-10)

Example (198) illustrates another use of an absolute frame of reference involving a wind term, but this time the term corresponds with the wind that blows from the mountains, *hai heeno moca*. The direction from which this particular wind blows corresponds with the head of the vector that specifies the direction that the chair is facing.

(198) *Hai heeno moca quih i-icp*
 wind desert toward.SBJ.NMLZ.move DEF.ART.SG.UNSPEC 3.POSS-side
hac i-iqui qu-iizc i-pac ziix
 DEF.ART.SG.LOC 3.POSS-toward SBJ.NMLZ-face 3.POSS-back thing
c-oqueht z i-ti y-ij.
 SBJ.NMLZ-bounce INDEF.ART 3.POSS-on DP-sit
 ‘It [the chair] is facing the direction from which the wind from the mountains blows and there is a ball (lit. thing that bounces) behind it.’ (MLA B&C 4-1)

6 Posture roots in Seri

Roots of posture verbs play an integral role in Seri grammar. They occur as heads of locative predicates and serve as the bases for definite articles and demonstratives. When they occur as heads of locative predicates and as constituents of definite descriptions, the posture roots have a classificatory effect. The posture roots impose selection restrictions on the referents of their arguments with respect to their disposition (including orientation) and geometry, in the sense that the object's shape or geometry affords a set of possible dispositions. Belloro et al. (2008: 180) define disposition as “non-inherent or stage-level spatial properties that describe the manner in which a figure is located with respect to a ground”. For illustration, long, skinny, rigid objects can be said to ‘stand’ when supported on one end of their dominant vertical axis, whereas short and stout objects can be said to ‘sit’ in this case. Both types of objects are said to ‘lie’ if they are supported alongside their dominant vertical axis. Locative descriptions, which frequently contain posture roots, are an important component of the grammar of space in Seri. Definite articles, which are derived from posture roots, play prominent role in the landscape domain. This chapter contains a discussion of the usage and semantics of the posture roots in Seri in both locative descriptions and as components of the definite article system.

6.1 Posture roots as heads of locative predicates

As discussed in Chapter 5, dispositional verb roots, especially posture roots, play a significant role as heads of locative predicates. The verb roots that occur in this function, based on data collected with the BowPed stimulus (Bowerman and Pederson 1993; see

discussion in Chapter 3), include: *-iih* ‘be located’, *-ijj* ‘sit’, *-oom* ‘lie’, *-oop/-aap* ‘stand’. In addition, there are verb roots which do not lexicalize postures of animate beings and which likewise occur as heads of locative predicates. These include *-aahca* ‘be located’, *-ocaa* ‘hang’, *-iti* ‘be connected’, *-saamij* ‘be curled in a spiral’, and *-acp* ‘be stuck’. This section presents the roots that occur in locative descriptions in Seri and the dispositions that are expressed by these roots. Each root is then discussed with respect to the necessary constraints it imposes on the shape of the figure and examples are also provided of the typical kinds of figures that occur with a particular root.

6.1.1 The set of verbs that head locative predicates

The verb roots that occur as heads of locative predicates in Seri⁴⁹ include verb roots that describe the location of a referent without specifying its disposition, as in *-iih* and *-aahca*, both ‘be located’; the posture of a referent, such as *-ijj* ‘sit’, *-oom* ‘lie’, *-oop/-aap* ‘stand’; and other dispositions, such as *-ocaa* ‘hang’, *-iti* ‘be connected’, *-saamij* ‘be curled in a spiral’, and *-acp* ‘be stuck’. Dispositional roots lexicalize information regarding the non-inherent spatial properties of entities, specifically along the lines of support/suspension/blockage of motion, orientation, and configuration of parts with respect to each other (Bohnemeyer and Brown 2007). Dispositions have elsewhere been characterized as “manners of location”, akin to manner of motion (Belloro *et al.* 2008).

When it comes to animate referents, locative predicates headed by posture verbs describe the actual posture of the referent of the figure nominal. This is shown in example

⁴⁹ The verb roots that are discussed in this section stem from verb roots that were used in the BowPed picture task (Bowerman and Pederson 1993). Some of the results from BowPed were presented in Chapter 5.

(199), where the figure nominal refers to a boy who is in a seated position behind a chair.

The posture verb *-ijj* ‘sit’ is used to describe the boy’s posture.

(199) *Qu-isil* *ctam quij* *hehe* *i-ti* *i-qu-iicolim*
 SBJ.NMLZ-small man DEF.ART.SG.sit wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL
quij *i-pac* *hac* *ano* *qu-ijj* *iha.*
 DEF.ART.SG.sit 3.POSS-back DEF.ART.SG.LOC 3.POSS.in SBJ.NMLZ-sit DECL
 ‘The boy (lit. little man) is sitting behind the chair (lit. wood on which one sits).’
 (RHF BowPed 64)

In example (200), the figure nominal describes a dog that is in a seated position next to a dog house. Since the dog is sitting, the posture verb *-ijj* ‘sit’ is used here, just as this verb root is used to describe the posture of the boy in (199).

(200) *Ha-xz* *tiix* *y-aaco* *cap* *i-hiin* *hac*
 ABS.POSS-dog DEM 3.POSS-house DEF.ART.SG.stand 3.POSS- near DEF.ART.SG.LOC
i-ti *y-ijj.*
 3.POSS-in DP-sit
 ‘The dog, it is sitting near its house.’ (AIM BowPed 40)

In order to describe the location of a man who is standing on the roof of a house, the posture verb *-oop* ‘stand’ is used, shown in example (201).

(201) *Cmaacoj* *cop* *h-aaco* *i-yat* *hac*
 man DEF.ART.SG.stand ABS.POSS-house 3.POSS-point DEF.ART.SG.LOC
i-ti *y-oop.*
 3.POSS-on DP-stand
 ‘The man is standing on top of a house.’ (AIM BowPed 34)

Finally, example (202) shows how *-oom* ‘lie’ is used to describe the posture of a dog as it is lying inside of its dog house.

(202) *Ha-xz* *quih* *y-aaco* *cop*
 ABS.POSS-dog DEF.ART.SG.UNSPEC 3.POSS-house DEF.ART.SG.stand
ano *y-oom.*
 3.POSS.in DP-lie
 ‘The dog is lying in its house.’ (AIM BowPed 71)

Posture verbs are also used in locative descriptions involving figure nominals that refer to inanimate entities. The constraints the posture roots impose on the figure

nominals and the types of figure objects they typically co-occur with they combine with are discussed in section 6.1.2.

The locative verb roots that are unspecified for posture, *-aahca* and *-iih*, both ‘be located,’ are used in locative descriptions involving figures where the actual posture or disposition of the figure referent is unknown. For instance, *-iih* is commonly used when asking where someone or something is. Examples of such expressions are provided in (203), where the referent of the figure nominal is animate, and in (204), where the referent is inanimate.

(203) *¿Rebeca quih háqui t-iih?*
 Rebeca DEF.ART.SG.UNSPEC where REAL.DEP-be.LOC
 ‘Where is Rebeca?’ (GHF Landscape 7/11/06 1)

(204) *¿Ziix an icoosi quij háqui t-iih?*
 thing 3.POSS.inOBL.NMLZ.DETRANS.drink DEF.ART.SG.sit where
 REAL.DEP-be.LOC
 ‘Where is the cup (lit. thing with which one drinks)?’ (AIM BowPed)

-Iih ‘be located’ has a separate polysemous sense ‘live’ or ‘reside’. This is shown in the question that is provided in (205), which asks the addressee where they live.

(205) *¿Me zó hant ano qu-iih-ya?*
 2 what land 3.POSS.in SBJ.NMLZ-be.LOC-INTERR
 ‘Where do you live?’ (Moser and Marlett 2005: 497)

Finally, among inanimate figure objects, *-iih* selects for objects that are flexible. This is discussed in section 6.1.2 in more detail.

Posture roots do not seem to encode information regarding the orientation of a figure object. For instance, a strategy of solving the Men and Tree picture-to-picture matching task (see Chapter 3 for a description of this task) involves describing the orientation of the toy man that appears in the photos, as his orientation, but not his

posture, changes in some of the pictures. In the following example, the matcher asked the director what the orientation of the toy man is by literally asking how he is standing, using the posture verb *-aap* ‘stand’:

(206) *¿Zó hant c-aap-ya?*
 how land SBJ.NMLZ-stand-INTERR
 ‘How is the man standing?’ (AIM M&T 2)

The director responded to the matcher by saying that the toy man is facing toward them.

This is illustrated in (207).

(207) *Hi-iqui qu-iizc ih.*
 1.POSS-toward SBJ.NMLZ-face DECL
 ‘[It] is facing me.’ (AIM M&T 2)

The second general locative verb, *-aahca* ‘be located’, also appears in locative descriptions. Like *-iih*, this locative verb root does not express a particular posture or disposition of the figure object. An example of an instance of this verb root being used to describe one of the BowPed line drawings is provided in (208).

(208) *Ziic i-ime hehe cap i-ti c-aahca iha.*
 bird 3.POSS-nest wood DEF.ART.SG.stand 3.POSS-in SBJ.NMLZ-be.LOC DECL
 ‘The birds nest is in the tree.’ (RHF BowPed 67)

It is at this time unclear what the precise semantic differences are between *-aahca* and *-iih*. *-Iih* seems to occur in locative descriptions of objects that are flexible, as is described below in section 6.1.2. *-Aahca*, on the other hand, does not seem to possess any such classificatory properties, at least not as it appears in locative descriptions.

Other dispositional verb roots, which do not lexicalize postures, likewise play an important role in Seri locative descriptions. An example of such a verb root is *-ocaii* ‘hang’. This verb root is used in locative descriptions that describe a figure object that is hanging or dangling from the ground object. This is shown in the locative descriptions

provided in (209) and (210), where an earring is described as hanging from an ear and a fruit is described as hanging from a tree, respectively.

(209) *Hasit quih i-sla cop i-ti y-ocaaï.*
 earring DEF.ART.SG.UNSPEC 3.POSS-ear DEF.ART.SG.stand 3.POSS-on DP-hang
 ‘The earring is hanging from her ear.’ (AIM BowPed 69)

(210) *Hehe i-s quij hehe ha-p-ec*
 wood 3.POSS-immature.fruit DEF.ART.SG.sit wood SBJ.NMLZ.PASS-plant
cap i-ti y-ocaaï.
 DEF.ART.SG.stand 3.POSS-on DP-hang
 ‘The fruit (lit. wood’s immature fruit) is hanging from the tree (lit. wood that has been planted).’ (GHF BowPed 27)

Support and suspension are different forms of neutralization of the pull of gravity.

Supporting forces apply from underneath the figure, hanging ones from above it. The ground stands in a part-whole relation or a relation of contact or attachment with the entity from which the supporting or suspending force originates. In (211), the figure object, a photograph, is attached to a nail or hook on the wall, such that it is hanging from that nail or hook; the wall is portrayed as the ground.

(211) *Ziix ipaspoj quih h-aaco*
 thing OBL.NMLZ.PASS.photograph DEF.ART.SG.UNSPEC ABS.POSS-house
quih i-izc com i-ti macaaï.
 DEF.ART.SG.UNSPEC 3.POSS-face DEF.ART.SG.lie 3.POSS-on RP.hang
 ‘The picture (lit. thing where it was photographed) is hanging on the wall of the house (lit. house’s face).’ (GHF BowPed 44)

However, in example (212), the figure object is suspended in the air without any visible supporting or suspending force, and *-ocaaï* is not used. The description was elicited with the Ball and Chair pictures series (this taks is described in more detail in Chapter 3). In the picture at issue, the ball appears to be floating in the air to one side of the chair. In this case, the ball is described as being in its canonical position of sitting, but as ‘sitting on air’ (*cola*).

(212) ...*ziix c-oqueht quih i-ti t-ij,*
 thing SBJ.NMLZ-bounce DEF.ART.SG.UNSPEC 3.POSS-on REAL.DEP-sit
cola xah y-ij.
 air PART DP-sit
 ‘...the ball (lit. thing that bounces) is there, it is in the air.’ (MLA B&C 2-4)

The verb root *-iti* ‘connected’ is used to describe a figure that is connected to a ground and generally a figure that grows on or from the ground. This root is only used with nominals that typically occur with the definite article *cap/cop* (the definite article derived from *-oop/-aap* ‘stand). This is shown in (213), which provides a description of a scene involving a tree that is standing on the side of a hill. In some ways, this verb root expresses the notion that the figure object is a (potentially non-necessary) part of the ground object.

(213) *Hehe cop hast cop i-mozit hac*
 wood DEF.ART.SG.stand stone DEF.ART.SG.stand 3.POSS-middle DEF.ART.SG.LOC
i-ti y-iti.
 3.POSS-on DP-connected
 ‘The tree is connected to the middle of the hill.’ (GHF BowPed 17)

Unlike *-ocai*, *-iti* does not express a relation of suspension between the figure and ground, although it is compatible with figure and ground being in such a relation. An example of such a use of *-iti* is shown in (214).

(214) *Hehe i-stalca taax hehe cop i-ti*
 wood 3.POSS-leaf.PL DEM.PL wood DEF.ART.SG.stand 3.POSS-on
yiticol.
 DP.connected.PL
 ‘The leaves, those are connected to the tree.’ (AIM BowPed 41)

The verb root *-oocp* ‘stuck to’ is used to describe relations between figure and ground objects that involve adhesion. The relationship between the figure and ground involves the figure being stuck to the ground in a particular way that prevents it from

moving. This is shown in (215) and (216), which were produced as descriptions of the same picture. In this picture, a round object is stuck to the bottom part of a table.

(215) *Ziix c-oqueht quih hehe i-ti*
 thing SBJ.NMLZ-bounce DEF.ART.SG.UNSPEC wood 3.POSS-on
i-c-oohitim com i-mocl
 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS-below
hac i-ti m-ooçp.
 DEF.ART.SG.LOC 3.POSS-on RP-stuck.to
 ‘The ball (lit. thing that bounces) is stuck to the bottom of the table (lit. wood on which one eats).’ (GHF BowPed 53)

(216) *Hehe i-s quij hehe i-ti*
 wood 3.POSS-immature.fruit DEF.ART.SG.sit wood 3.POSS-on
i-c-oohiitim com i-mocl
 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS-below
hac i-iqui çöiyacp
 DEF.ART.SG.LOC 3.POSS-toward OBL.DP.stuck.to
 ‘The fruit (lit. wood’s immature fruit) is stuck to the bottom of the table (lit. wood on which one eats).’ (AIM BowPed 53)

As was shown in Chapter 5, locative predicates in Seri are, for the most part, headed by verb roots that express the posture or disposition of the figure object. The set of verbs used in what has been determined to be the Basic Locative Construction in Seri,⁵⁰ based on the discussion provided in Chapter 5, is close to that of a postural verb language such as Dutch or Arrernte, in which every standard locative predicate is headed by one of less than a handful of verb roots, most or all of which lexicalize posture. Postural roots were the most common types of verb roots used in locative descriptions. But the way in which the posture verbs are used in Seri is closer to the way they are used in multi-verb languages such as the Mayan languages, in which default locative predicates are formed with a large set of dispositional roots. That is, the posture roots in Seri are not assigned on the basis of the figure’s geometry alone, but on the basis of the

⁵⁰ The Basic Locative Construction of a language is the construction used to locate an easily movable inanimate figure with respect to a ground to which it is not attached in response to a ‘where’ question (Levinson and Wilkins 2006b; Levinson and Meira 2003).

figure’s actual disposition (Levinson and Wilkins 2006). The discussion below, which focuses on the use of posture roots with inanimate figure objects, sheds further light on the way posture roots are used in locative descriptions.

6.1.2 Selection restrictions of the posture roots

This section looks more closely at the semantics of the three posture verb roots in Seri – *ijj* ‘sit’, *-oom* ‘lie’, *-oop/-aap* ‘stand’. These verb roots are not only used to describe the posture of humans and other animate beings, but also occur as the heads of locative descriptions with inanimate figure objects such as artifacts. The following discussion presents the types of constraints that each posture verb root imposes on the shape of the figure object in a locative description whose predicate it heads. As part of this discussion, the prototypical figure objects each root is used with are characterized.

The posture verb root *-ijj* ‘sit’ occurs as the head of locative predicates that select figure nominals referring to objects not significantly taller than wide in canonical orientation, including round objects. This is shown in (217) and (218), where the figure nominals are *ziix an icoosi* ‘cup’ and *ziix coqueht* ‘ball’, respectively. It also occurs with figure nominals that refer to insects and some smaller animals (Moser and Marlett 1994), as is illustrated in (219) where the figure nominal is *coopol* ‘black widow’.

- (217) *Ziix an i-c-oosi quij hehe*
 thing 3.POSS.in 3.POSS-UNSPEC.SBJ-DETRANS.drink DEF.ART.SG.sit wood
i-ti i-c-oohitim com i-ti
 3.POSS-on 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS-on
qu-ij iha.
 SBJ.NML-sit DECL
 ‘The cup (lit. thing from which one drinks) is on the table (lit. wood on which one eats).’ (GHF BowPed 1)

(218) *Ziix c-oqueht quij hehe i-ti*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit wood 3.POSS-on
i-qu-iicolim quij i-mocl hac
 3.POSS-UNSPEC.SBJ-sit.PL DEF.ART.SG.sit 3.POSS-below DEF.ART.SG.LOC
ano y-ij.
 3.POSS.on DP-sit
 ‘The ball (lit. thing that bounces) is under the table (lit. wood on which on sits).’
 (GHF BowPed 16)

(219) *C-oopol quij hant qu-iizc com*
 SBJ.NMLZ-black DEF.ART.SG.sit land SBJ.NMLZ-face DEF.ART.SG.lie
i-ti y-ij.
 3.POSS-on DP-sit
 ‘The black widow (lit. that which is black) is on the wall (lit. land that faces).’
 (GHF BowPed 7)

The posture verb *-oop/-aap* ‘stand’ occurs as the head of locative predicates that apply to figure objects taller than wide and canonically in an upright position. This is shown in (220), where the figure nominal is *hehe cop* ‘tree’.

(220) *Hehe cop hast cap cöipatj hac*
 wood DEF.ART.SG.stand stone DEF.ART.SG.stand side DEF.ART.SG.LOC
i-ti y-oop.
 3.POSS-on DP-stand
 ‘The tree is standing on one side of the mountain.’ (AIM BowPed 17)

The posture verb *-oom* ‘lie’ occurs as the head of locative predicates that apply to figure nominals describing objects that are saliently extended in one or two dimensions, i.e., long or wide and flat (such as the sea). Generally, figure objects that occur with *-oom* are supported along their dominant axis or axes. This is shown in (221), where the figure nominal is *canoaa* ‘boat’.

(221) *Canoaa com xepe com i-ti y-oom.*
 boat DEF.ART.SG.lie seawater DEF.ART.SG.lie 3.POSS-on DP-lie
 ‘The boat is in the ocean.’ (GHF BowPed 11)

-Oom also applies to objects that are not canonically in a particular position such as upright or lying down, for example *eenm haxöl* ‘spoon’. This nominal can occur as the

figure in a locative description with *-oom*, as is shown in (222). But the speaker also told me that one could replace *-oom* with *-oop* ‘stand’, even if the spoon is not upright in a standing position.

- (222) *Eenm haxöl ha-mazaj quih*
 metal multicolored.clam ABS.POSS-clay.pot DEF.ART.SG.UNSPEC
i-pac hac ano y-oom.
 3.POSS-back DEF.ART.SG.LOC 3.POSS.in DP-lie
 ‘There is a spoon (lit. metal multicolored clam) behind the clay pot.’
 (AIM BodyPartLocation)

When the locative verb root *-iih* co-occurs with inanimate figure nominals, it tends to occur with ones that describe flexible objects (see discussion in Moser and Marlett 1994). Examples are the following figure nominals, illustrated below: *toaaz* ‘sarong’ in (223), *hateiictim* ‘piece of cloth’ in (224), *ziix cxatlc* ‘tortilla’ in (225), and *ziix hax ano yafin* ‘hose’ in (226).

- (223) *Toaaz quih ziix an*
 sarong DEF.ART.SG.UNSPEC thing 3.POSS.in
i-qu-eaacalca quij i-icp hac
 3.POSS-UNSPEC.SBJ-store.belongings DEF.ART.SG.sit 3.POSS-side DEF.ART.SG.LOC
ano y-iih.
 3.POSS.in DP-be.LOC
 ‘There is a sarong next to the bag (lit. thing in which one stores belongings) [and the bag is next to something, like a suitcase].’ (AIM ReINPPCombo)

- (224) *Hateiictim quih hehe cap i-ti*
 piece.of.cloth DEF.ART.SG.UNSPEC wood DEF.ART.SG.stand 3.POSS-on
cola qu-iih iha.
 high SBJ.NMLZ-be.LOC DECL
 ‘The piece of cloth is on the stick, in the air.’ (RHF BowPed 56)

- (225) *Ziix c-xatlc zo ziix i-ti*
 thing SBJ.NMLZ-flat.PL INDEF.ART thing 3.POSS-on
i-c-axatlc cop i-hiin hac
 3.POSS-UNSPEC.SBJ-make.tortillas DEF.ART.SG.stand 3.POSS-near DEF.ART.SG.LOC
i-ti y-iih.
 3.POSS-on DP-be.LOC
 ‘There is a tortilla (lit. flat thing) in front of the griddle (lit. thing on which one makes tortillas).’ (AIM BodyPartLocation)

(226) *Ziix hax ano yafin quih hehe*
 thing freshwater 3.POSS.in OBL.NMLZ.pass DEF.ART.SG.UNSPEC wood
i-t i-ti qu-iih iha.
 3.POSS-base 3.POSS-on SBJ.NMLZ-be.LOC DECL
 ‘The hose (lit. thing in which freshwater passes) is on the stump (lit. base of the tree).’ (RHF BowPed 43)

–*Iih* also occurs in locative descriptions where the figure nominal refers to paper or items made of paper, like *hapaspoj hanocaj* ‘book’. This likely stems from the fact that *hapaspoj hanocaj* contains the word *hapaspoj* ‘paper’ (lit. that which is read), and paper itself is flexible. This co-occurrence of –*iih* and *hapaspoj hanocaj* is shown in (227).

(227) *Hapaspoj hanocaj tiix hant i-ti*
 SBJ.NMLZ.PASS.read SBJ.NMLZ.PASS.carry DEM land 3.POSS-on
i-qu-eaacalca com i-yat
 3.POSS-UNSPEC.SBJ-store.possessions DEF.ART.SG.lie 3.POSS-point
hac i-ti y-iih.
 DEF.ART.SG.LOC 3.POSS-on DP-be.LOC
 ‘The book (lit. that which is read that is carried) is above the bookshelf (lit. land on which one stores possessions).’ (AIM BowPed 8)

Finally, –*iih* occurs in locative descriptions where the figure nominal is headed by *hoocala* ‘cloud’. The referent of this nominal seems to also fit in the category of objects that are flexible or malleable. This co-occurrence is shown in (228).

(228) *Hoocala quih hast cop i-yat*
 cloud DEF.ART.SG.UNSPEC stone DEF.ART.SG.stand 3.POSS-top
hac i-ti y-iih.
 DEF.ART.SG.LOC 3.POSS-on DP-be.LOC
 ‘The cloud is above the hill.’ (AIM BowPed 36)

The verb roots that occur in Seri locative descriptions do not function in a classificatory way in the same manner as those in Dutch and Arrernte do (Levinson and Wilkins 2006; see also the discussion in Chapter 5 on the Basic Locative Construction). The same figure nominal occurs with different posture roots depending upon the actual posture or position of the figure. So what is classified by posture/dispositional locative

predicates is the actual disposition of the figure, not its geometry, as it is in Dutch and Arrernte. If the disposition of the figure is unknown, *-iih* ‘be located’ is used as the head of the locative predicate.

6.2 Posture roots as bases for definite articles and demonstratives

This section provides a discussion of the role posture verb roots play as bases for determiners in definite descriptions in Seri. As is described in more detail below, definite articles and demonstratives derived – at least diachronically – from the posture verb roots are pervasive in the nominal domain. Motion verb roots also serve as bases for determiners, as is briefly discussed below. The selection restrictions imposed by the posture roots as part of Seri determiners are similar to those in the context of locative descriptions discussed above.

In general, Seri noun phrases end with a determiner or an adnominal demonstrative, as mentioned in Chapter 4. Determiners combine with common nouns (e.g., *hehe iti icoohitim com* ‘table’ in (231)), including possessed nominals (e.g., *ihiiin hac* ‘near it’ in (233)), but also with proper names (e.g., *Socaaix quij* ‘Punta Chueca’ in (229)). Under certain circumstances, singular definite articles can combine with plural nominals.

Definite articles in Seri are derived from subject-nominalized forms of the posture verbs *-ijj* ‘sit’ (> *quij* as in *Socaaix quij* ‘Punta Chueca’ in (229)), *-oop/-aap* ‘stand’ (> *cop/cap* as in *hehe hapec cap* ‘tree’ in (230)), and *-oom* ‘lie’ (> *com* as in *hehe iti icoohitim com* ‘table’ in (231)), as well as from the subject-nominalized forms of *-iih* ‘be located’ (> *quih* as in *iixöni quih* ‘her placenta’ in (232)) and *-aahca* ‘be located’ (> *hac* as in *ihiiin hac* ‘near it’ in (233)).

- (229) *Socaaix* **quij** *i-icp* *hac* *i-iqui*
 Punta.Chueca DEF.ART.SG.sit 3.POSS-side DEF.ART.SG.LOC 3.POSS-toward
y-iin.
 DP-go
 ‘S/he went to Punta Chueca.’ (GHF 7/11/06)
- (230) *Hehe* *i-s* *quij* *hehe* *ha-p-ec*
 wood 3.POSS-immature.fruit DEF.ART.SG.sit wood SBJ.NMLZ-PASS-plant
cap *i-ti* *y-acaai.*
 DEF.ART.SG.stand 3.POSS-on DP-hang
 ‘The fruit (lit. wood’s immature fruit) is hanging from the tree (lit. wood that has
 been planted).’ (GHF BowPed 27)
- (231) *Ziix* *an* *i-c-oosi* *quij* *hehe*
 thing 3.POSS.in 3.POSS-UNSPEC.SBJ-DETRANS.drink DEF.ART.SG.sit wood
i-ti *i-c-oohitim* **com** *i-ti* *qu-ijij* *iha.*
 3.POSS-on 3.POSS-UNSPEC.SBJ-eat.PL DEF.ART.SG.lie 3.POSS-on SBJ.NMLZ-sit DECL
 ‘The cup (lit. thing from which one drinks) is on the table (lit. wood on which one
 eats).’ (GHF BowPed 1)
- (232) *Iixöni* **quih** *Zozni* *Cacösxaj* *i-ti*
 3.POSS.placenta DEF.ART.SG.UNSPEC ? SBJ.NMLZ.tall 3.POSS-on
t-iih...
 REAL.DEP-be.LOC
 ‘Her placenta is in *Zozni Cacösxaj* [a camp on Tiburon Island, lit. tall *Zozni*]...’
 (LandscapeElicitation ABM 12/3/08 1)
- (233) *Ha-xz* *quij* *y-aaco* *i-hiin* **hac**
 ABS.POSS-dog DEF.ART.SG.sit 3.POSS-house 3.POSS-near DEF.ART.SG.LOC
i-ti *y-ijij.*
 3.POSS-on DP-sit
 ‘The dog is sitting near its house.’ (GHF BowPed 6)

The definite article system in Seri is formally similar to the demonstrative system, in that they are both derived through a similar process, involving subject nominalized forms of posture and motion roots.⁵¹ Table 7, in Chapter 4 illustrates the determiners in Seri, with the exception of the indefinite articles, which include *zo* (singular) (likely derived from *tazo* ‘one’) and *pac* (plural).

⁵¹ I assume that the definite articles, which are synchronically derived from subject nominalized verb forms, resulted from grammaticalization.

As is shown in Table 7 in Chapter 4, some of the adnominal demonstratives are also derived from the posture roots mentioned earlier. The semantics and pragmatics of the proximal-medial-distal distinction is discussed in Chapter 5 in the section on spatial deixis. In addition to the demonstratives derived from posture roots, some are derived from motion verbs; e.g. *moca* ‘move toward’ (> *hipmoca* etc.) and *contica* ‘go away’ (> *hipintica* etc.). These two adnominal demonstrative seem to have non-exophoric or textual uses, on which they function as alternatives to the definite articles (Marlett ms. 786-787; see also Moser and Marlett 1994). They are used when there is motion or fictive motion of the figure object involved. In example (234), the noun phrase *poosj tintica* ‘rope’ is used to refer to a clothesline. The use of *tintica* indicates fictive motion (following Talmy 2000) regarding the trajectory of the clothesline, as the clothesline is not moving, but rather its trajectory is extended through space.

(234) *He he-aacalca quih poosj tintica*
 1 1.POSS-clothes DEF.ART.SG.UNSPEC rope DEM.MED.go
i-ti h-y-aasalim.
 3.POSS-on 1-DP-extend.to.dry
 ‘I hung my clothes on the clothesline (lit. going away rope).’
 (AIM CausedPositions)

In example (235), the noun phrase *ziix coqueht timoca* ‘ball’ is used to refer to a ball that rolled toward the speaker. In this case, *timoca* is used to describe that the ball is moving and the ball’s actual direction of motion.

(235) *Ziix c-oqueht timoca hant c-noohcö*
 thing SBJ.NMLZ-bounce DEM.MED.come land SBJ.NMLZ-concave
quih i-teel com i-ti hant
 DEF.ART.SG.UNSPEC 3.POSS-edge DEF.ART.SG.lie 3.POSS-on land
c-maasij i-iqui y-iin.
 SBJ.NMLZ-roll 3.POSS-toward DP-go
 ‘The ball (lit. thing moving hither that bounces) came rolling to the edge of the hole in the ground (lit. land that is concave).’ (AIM MoVerb Paths 9)

Tintica is not restricted to objects moving away from the deictic center. This is shown in (236), where the noun phrase *ziix coqueht tintica* is used to refer to a ball that is moving to the lefthand side of the speaker’s vision.

(236) *Ziix c-oqueht tintica hant c-maasij cöipatj*
 thing SBJ.NMLZ-bounce DEM.MED.go land SBJ.NMLZ-roll side
hac i-iqui y-iin.
 DEF.ART.SG.LOC 3.POSS-toward DP-go
 ‘The ball (lit. thing that bounces) went rolling to one side.’ (AIM MoVerb Paths 1)

There are a number of plural definite articles in Seri, but the most commonly used one is *coi*, which is derived from *-iih* ‘be located’ (Marlett ms. 784). *Coi* is used with plural count nouns, as with *caaytaj coi* ‘horses’ in (237), and with mass nouns that refer to granular substances (Moser ms. 784). It also occurs with collective nouns such as *tom* ‘money’, as in (238).

(237) *Zaah quih coox cah caaytaj coi*
 day DEF.ART.SG.UNSPEC all DEF.ART.SG.FOC horse.PL DEF.ART.SG.PL
coccaa ha.
 OBL.SBJ.NMLZ.look.for DECL
 ‘S/he comes every day to look for the horses.’ (Marlett ms. 784)

(238) *María quih Juan quih tom coi*
 María DEF.ART.SG.UNSPEC Juan DEF.ART.SG.UNSPEC money DEF.ART.SG.PL
cö-i-y-éesxö.
 OBL-3;3-DP-hide
 ‘Mary hid the money from Juan.’ (Marlett ms. 784)

Seri definite articles and demonstratives seem to illustrate many characteristics of a noun class system, following the nominal classification typologies of Dixon (1985) and Aikhenvald (2000). Aikhenvald’s (2000) typology focuses on the morphosyntactic properties of the classificatory morphemes. Noun class systems can be categorized by the fact that membership in a given noun class is marked by elements within the noun phrase, but outside the nominal head, or even outside of the noun phrase. However, as is shown

in the discussion below, the Seri definite article and demonstrative system is different from noun class systems described by Dixon and Aikhenvald in that the classification of the noun phrase referents it provides is not in terms of inherent properties, but rather in terms of their posture or, more generally, their disposition.

A point worth mentioning regarding the analysis of the definite articles as such and not as internally headed relative clauses is based on a few different pieces of evidence. In particular, the definite articles differ from the subject nominalized verb forms of the posture verbs in that they exhibit a reduction in vowel length. Additionally, the definite articles occur in the same syntactic slot as the indefinite article *zo*.

The choice of which definite article or demonstrative is used with which head nominal is determined by properties of the referent of the nominal. The properties that determine the co-occurrence were, to a large extent, presented in the previous section in the discussion of posture verb roots in locative descriptions. These extend to the selectional restrictions that pertain to definite articles. For instance, *cop*, the definite article derived from *-oop/-aap* ‘stand’, occurs with animate referents that are actually standing, as is illustrated in (239), which describes a photograph of a standing toy man, *cmaacoj cop*, looking in the direction of the location where the addressee is sitting. This is also illustrated in (240), where *cop* occurs with *haxz* ‘dog’ in order to illustrate that the dog is standing, as opposed to sitting.

- (239) *Cmaacoj cop mi-iqui qu-iizc ih.*
 man DEF.ART.SG.stand 2.POSS-toward SBJ.NMLZ-face DECL
 ‘The man is facing you.’ (M&T AIM 2)

(240) *Xcomoj zo ha-xz cop i-slac*
 fly INDEF.ART ABS.POSS-dog DEF.ART.SG.stand 3.POSS-ear
cop i-ti y-ij.
 DEF.ART.SG.stand 3.POSS-on DP-sit
 ‘There is a fly sitting on the dog’s ear.’ (AIM BodyPartLocation)

Cop also occurs with inanimate nominals that refer to objects that have a single dominant longest axis and are supported on one end of that axis. This is shown in (241), where the nominal *hehe hant hanip* ‘tree’ (lit. wood that was hit into the land) occurs with *cop*.

Another example is (242), where a slightly different expression for tree contains the definite article *cop*, namely, *hehe cop*.

(241) *Cmaacoj c-azooj quih cmaax hehe hant*
 man SBJ.NMLZ-use.walking.stick DEF.ART.SG.UNSPEC now wood land
hanip cop i-iqui t-ipac...
 SBJ.NMLZ.PASS.hit DEF.ART.SG.stand 3.POSS-toward REAL.DEP-back
 ‘Now the man with a walking stick is facing the tree (lit. wood that was hit in the land)...’ (M&T AIM 2)

(242) *Hehe cop hast cop i-mozit hac*
 wood DEF.ART.SG.stand stone DEF.ART.SG.stand 3.POSS-middle DEF.ART.SG.LOC
i-ti y-iti.
 3.POSS-on DP-connected
 ‘The tree is connected to the middle of the hill.’ (GHF BowPed 17)

The fact that *cop* occurs with nominals that describe saliently one-dimensional objects is further illustrated in (243), where it occurs with *hinol* ‘my arm’. The arm has a saliently longest axis that is supported on one end by the body.

(243) *Ipazt hi-nol cop i-ti c-ooxalca*
 OBL.NMLZ.PASS.tattoo 1.POSS-arm DEF.ART.SG.stand 3.POSS-on SBJ.NMLZ-sit.PL
coleecp hac i-ic qu-ij quij,
 place.above DEF.ART.SG.LOC 3.POSS-side SBJ.NMLZ-sit DEF.ART.SG.sit
Armando quih i-y-oozt.
 Armando DEF.ART.SG.UNSPEC 3;3-DP-tattoo
 ‘The tattoo (lit. where it was tattooed) that is higher up on my arm, Armando tattooed it...’ (AIM ReIN_w/o_hac)

Cop also occurs with nominals referring to liquids that are in containers. While these presumably satisfy the semantic support predicate expressed by *cop*, it is not immediately clear how they satisfy its selectional restrictions. Uses of *cop* in reference to meteorological events, such as *iipca* ‘rain’, and some time expressions, such as *ihamoc* ‘night’ and *ihapl* ‘winter’ (Moser and Marlett 1994) appear to be purely metaphorical. The bases of these metaphors require further investigation.

The definite article *com*, which is derived from the verb *-oom* ‘lie’, occurs likewise with nominals that refer to entities with a single saliently longest axis, but requires these objects to be supported along the dominant axis, rather than on one end of it. This is shown in (244), where *com* occurs with *canoaa* ‘boat’, in (245) with *hataamt* ‘shoe’, in (246) with *zixcam* ‘fish’, and in (247), where *hehe iti icoohitim* ‘table’ occurs with *com*.

(244) *Canoaa com xepe com i-ti y-oom.*
 boat DEF.ART.SG.lie seawater DEF.ART.SG.lie 3.POSS-on DP-lie
 ‘The boat is in the ocean.’ (GHF BowPed 11)

(245) *Ha-taamt com comcaii quih*
 ABS.POSS-shoe DEF.ART.SG.lie woman DEF.ART.SG.UNSPEC
qu-itaamt iha.
 SBJ.NMLZ-wear.shoes DECL
 ‘The shoe is on the woman.’ (RHF BowPed 21)

(246) *Zixcam com hax cap ano*
 fish DEF.ART.SG.lie freshwater DEF.ART.SG.stand 3.POSS.in
c-oom iha.
 SBJ.NMLZ-lie DECL
 ‘The fish is in the water.’ (RHF BowPed 32)

(247) *Hamac c-anoj quij hehe i-ti*
 fire SBJ.NMLZ-burn.with.hiss DEF.ART.SG.sit wood 3.POSS-on
i-c-oohitim com i-tacl
 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS-above
hac i-ti y-ij.
 DEF.ART.SG.LOC 3.POSS-on DP-sit
 ‘The light (lit. fire that burns with a hiss) is above the table (lit. wood on which one eats).’ (GHF BowPed 13)

Like *cop*, *com* has uses that appear to be metaphorical. For instance, it occurs with certain conceptually plural entities, such as *comcaac com* ‘Seri people’ (Moser and Marlett 1994).

The definite article *quij*, which is derived from the verb *-ijj* ‘sit’, can occur with nominals that refer to animate entities that are in a seated position, as is shown in (199) above with *quisil ctam quij* ‘the boy’. Example (1) was discussed in section 6.1.1 for featuring *-ijj* as the head of a locative predicate; the same root occurs in the determiner of the figure nominal this predicate combines with. This example is repeated here as (248).

(248) *Qu-isil ctam quij hehe i-ti i-qu-iicolim*
 SBJ.NMLZ-small man DEF.ART.SG.sit wood 3.POSS-on 3.POSS-UNSPEC.SBJ-sit.PL
quij i-pac hac ano qu-ijj iha.
 DEF.ART.SG.sit 3.POSS-back DEF.ART.SG.LOC 3.POSS.in SBJ.NMLZ-sit DECL
 ‘The boy (lit. little man) is sitting behind the chair (lit. wood on which one sits).’
 (RHF BowPed 64)

Quij also occurs with nominals that describe objects lacking any axis that is saliently longer than the others, such as *hehe is* ‘fruit’ in (249) and *ziix coqueht* ‘ball’ in (250).

(249) *Hehe i-s quij hehe ha-p-ec*
 wood 3.POSS-immature.fruit DEF.ART.SG.sit wood SBJ.NMLZ.PASS-plant
cap i-ti yocaai.
 DEF.ART.SG.stand 3.POSS-on DP.hang
 ‘The fruit (lit. wood’s immature fruit) is hanging from the tree (lit. wood that has been planted).’ (GHF BowPed 27)

(250) *Ziix c-oqueht quij hehe i-ti*
 thing SBJ.NMLZ-bounce DEF.ART.SG.sit wood 3.POSS-on
i-c-oohitim com ano
 3.POSS-UNSPEC.SBJ-DETRANS.eat.PL DEF.ART.SG.lie 3.POSS.on
qu-ij iha.
 SBJ.NMLZ-sit DECL
 ‘The ball (lit. thing that bounces) is on the table (lit. wood on which one eats).’
 (RHF BowPed 53)

This definite article also occurs with nominals that refer to insects and small animals, such as *coopol* ‘black widow’ in (219). Nominals that refer to birds also occur with *quij* (Moser and Marlett 1994).

The definite article *quih*, which is derived from the verb *-iih* ‘be located’, occurs with nominals unspecified for posture, as is illustrated in (203) above. The example features both *quih* as the determiner of the figure nominal and *-iih* as the root of the head of the locative predicate. Both are selected for the same reason: the utterance is a question and the actual posture of the figure (a person in this case) is unknown. This example is repeated here as (251).

(251) *¿Rebeca quih háqui t-iih?*
 Rebeca DEF.ART.SG.UNSPEC where REAL.DEP-be.LOC
 ‘Where is Rebeca?’ (GHF Landscape 7/11/06 1)

Quih also occurs with nominals that describe flexible objects, as is illustrated in (252) with *hateiictim iictim* ‘piece of cloth’, in (253) with *hatj ipaxquim* ‘belt’ and in (254) with *caamiz* ‘shirt’.

(252) *Hateiictim iictim quih contiir*
 piece.of.cloth OBL.NMLZ.be.cut DEF.ART.SG.UNSPEC lamp
im-atax i-mozit hac i-iqui
 SBJ.NMLZ.NEG-go candle 3.POSS-middle DEF.ART.SG.LOC 3.POSS-toward
yahizj.
 DP.tied.to
 ‘The piece of cloth (lit. piece of cloth where it was cut) is tied to the middle of the candle (lit. lamp that does not go).’ (GHF BowPed 4)

The object interpretation of *eenim cop* is a result of the selection restrictions that are imposed by *-oop* ‘stand’. This is based on the assumption that substances or masses cannot ‘stand’ or be in any other particular posture, but that only objects can. This is of particular relevance to the interpretation of many of the complex landscape terms, as is discussed in more detail in Chapter 7. The remaining portion of this chapter deals with some of the formal details regarding the interpretation of some of the combinations of mass nouns and determiners in Seri, as it is relevant to landscape terms. Although this is an important component of this dissertation, for those readers who are less interested in the formal details of the semantics of landscape terms, this portion of the chapter may be skipped without preventing the reader from understanding the remaining chapters of the dissertation and the reader may pick up at the beginning of Chapter 7.

A formal analysis of the coercion effect that is relevant to the interpretation of combinations of mass noun heads and posture/motion-conflating determiners can be given in Pustejovsky’s (1991, 1995) Generative Lexicon framework. This approach is based on type theory, which treats a type system essentially as a small Categorical Grammar of a formal language, where there are different function types that take typed categories as input and output and are combined based on a function application. In the Generative Lexicon framework the type of a given expression determines what other expressions, depending on their type, it can combine with and also the type of the resulting expression. In Montague Grammar (Montague 1973; Dowty, Wall, and Peters 1981), both count nouns and mass nouns are of type $\langle e, t \rangle$, defining the sets of individuals described by the nouns, just as adjectives and intransitive verbs define the sets of individuals to which the properties or states of affairs they describe apply.

Pustejovsky, however, uses a richer type hierarchy (strictly speaking, a type lattice) than that of Montague Grammar, which links highest-rank types such as those of entities and events to progressively narrower subtypes (e.g., artifact or print matter), all the way down to the categories lexicalized by ordinary lexical items (e.g., book or newspaper). This hierarchy, which is based on that of Copestake and Briscoe (1992), includes distinct types for physical/spatial objects ('physobj') and substances ('mass').

Pustejovsky proposes coercion as an operation of "enriched composition" that under certain conditions can prevent what would otherwise be a type mismatch between a functor and its argument.⁵² Consider (260) above. The definite article *cop* inherits the selectional restrictions of the posture verb root it is derived from *-oop* 'stand'. *-Oop* requires its subject – the figure – to be of the type of spatial objects ('physobj'). The lexical semantics of the verb *-oop* is represented by the box in the upper right portion of Figure 3.

⁵² There are many semanticists who have noted and discussed the phenomenon of type coercion without treating it as such or without developing an account of it. In the former category are Bach 1986 and Hobbs 1985 and in the latter category are Moens 1987 and Moens and Steedman 1988. I use Pustejovsky's approach because it provides a formal account on how to deal with type mismatches using coercion.

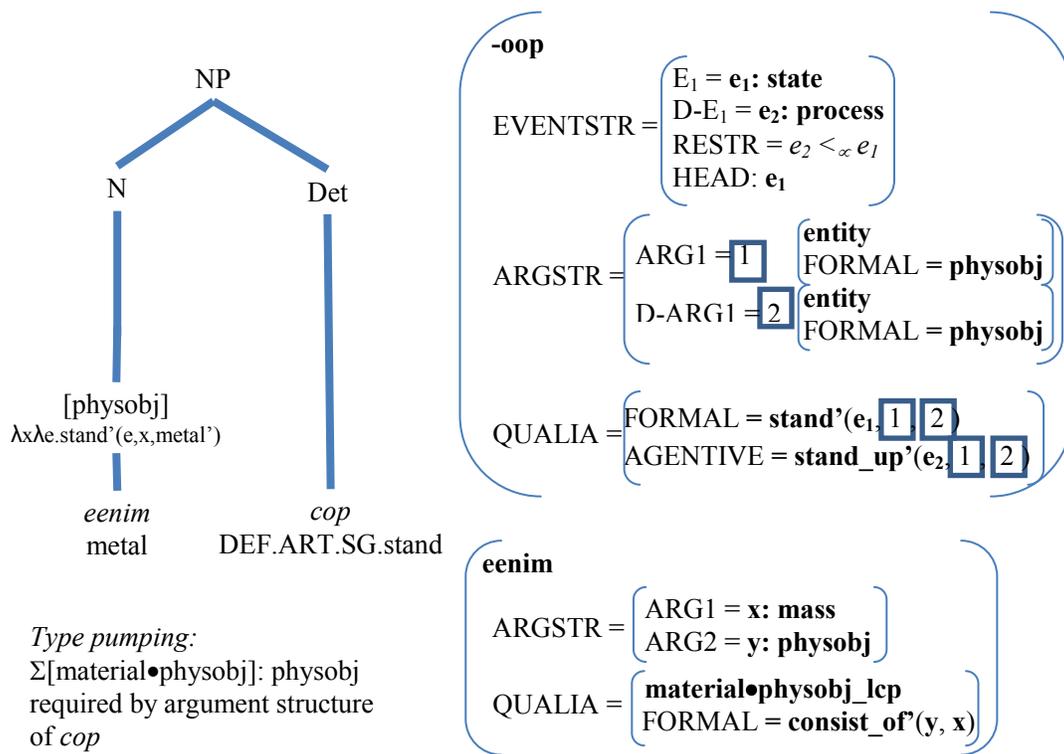


Figure 3. Enriched composition analysis of *eenim cop* ‘knife’

The “argument structure” component (ARGSTR) of *-oop* spells out two semantic arguments, the figure and the ground (the latter is a “default argument” (D-ARG) and may remain implicit). Both are of the type *physobj*.⁵³

The subject nominalization involved in the derivation of the article *cop* from *-oop* lamda-abstracts over the subject argument position, creating a predicative expression with the meaning ‘that which stands’. In order to compose with the nominal head *eenim* ‘metal’ (see the diagram on the left of Figure 3), this predicate must be applied to the

⁵³ The “event structure” component of the semantic representation of *cop* spells out two phases in any state of affairs that can be described by *cop*, a state and a preceding process. The “qualia structure” specifies these as the state of the figure standing on the ground and the process of the figure standing up on the ground, respectively. The qualia structure is a highly structured representation of the bulk of the content of the various meaning components combined in the lexical semantic representation. The state phase of the eventuality type described by *cop* is the “head” of the event structure, meaning the more prominent of the two phases.

semantic representation of *eenim*, sketched in the second box in the right portion of Figure 3.

In the Generative Lexicon framework, the sense of *eenim* can be treated as a relation between two different basic senses, each associated with a different type: that of a substance (‘mass’ or ‘material’, the latter being a subtype of the former in the type hierarchy) and that of a physical object (‘physobj’). This is not a case of polysemy in the traditional sense, but of “logical polysemy”, reflecting a systematic relationship between types that goes beyond individual lexical items. In the case discussed here, the relationship is one of consistency – the object consisting of the material – as spelled out in the “formal” *quale* of *eenim*, as provided in the bottom right of Figure 3.

The two base senses of *eenim* are combined in a new kind of complex type, called a “dotted type”, represented by the dot in the qualia structure. A dotted type is part of the qualia structure of lexical items that have two polysemous senses in order to represent the two possible types of the lexical item as one complex type.⁵⁴ A “type pumping” operation is a type-shifting operation that takes a dotted type as its input and returns either of its base types. In other words, type pumping projects one of the types of complex type in order to select a particular sense of a lexical item that has a dotted type in its qualia structure. Such a type pumping operation lies at the heart of type coercion. The only sense of *eenim* that can be interpretably combined with *cop* – the only sense that can be said to be ‘standing’ – is the entity sense associated with the ‘physobj’ type. Enriched composition ensures that this sense is selected via type pumping. The coerced

⁵⁴ Mass nouns in Pustejovsky’s framework are dotted types allowing for two possible types in the qualia structure of a lexical item. This seems to be a superior way of dealing with the interpretations of nominals like *eenim* ‘metal’ in Seri, such as is illustrated in (259) and (260). For instance, if one were to propose an underpsecification account, one would have to explain the absence of selection restrictions that would coerce a count interpretation in (259).

compositional interpretation results in ‘standing metal’. The non-compositional sense of *eenim cop*, ‘knife’, is achieved by narrowing the broader category denoted under the compositional interpretation to a much more specific subtype. However, when *eenim* is used in contexts that do not require the coercion of an entity interpretation, such as in (259) above, the material sense may prevail.

Type coercion plays an important role in the interpretation of complex landscape terms. Classificatory substance terms, which lexicalize substance, head complex landscape terms. Specifics on the set of classificatory substance terms are provided in Chapter 7. One of the classificatory substance terms is *hast* ‘stone’. In its most basic sense, it lexicalizes the material ‘stone’ or ‘rock’, which, coincidentally are almost interchangeable in English. This term is comparable to *eenim* ‘metal’ in the example above. The classificatory substance term occurs with the definite article *cop* resulting in the interpretation ‘hill’ or ‘mountain’. This is illustrated in (261).

(261) *Hehe cop hast cop i-mozit hac*
 wood DEF.ART.SG.stand stone DEF.ART.SG.stand 3.POSS-middle DEF.ART.SG.LOC
i-ti y-iti.
 3.POSS-on DP-connected
 ‘The tree is connected to the middle of the hill.’ (GHF BowPed 17)

In this case, when *hast* combines with the definite article *cop*, type coercion is required since, as in the example above, *cop* inherits the selectional restrictions of its posture verb base –*oop* ‘stand’. The resulting interpretation of *hast cop* is one of a physobj type, namely ‘standing stone’ – this interpretation is ensured via the type pumping component of enriched composition, which projects one of the subtypes of the dotted type. The non-compositional interpretation of *hast cop*, ‘mountain’, as with *eenim cop*, is achieved by

narrowing the broader category denoted under the compositional interpretation to a much more specific subtype

There are two other types of complex landscape terms, which are discussed in more detail in Chapter 7. One type involves the combination of a classificatory substance term and a nominalized verb form and the other type involves a classificatory substance term and a spatial relational noun. The first type is illustrated with *hant ipzx tintica* ‘arroyo’ in (262) and the second type is illustrated with *xepe quih iteel com* ‘beach’ in (263).

(262) ...*hant i-pzx tintica an ih-p-aa...*
 land OBL.NMLZ-chipped DEM.MED.go 3.POSS.in 1-IRR-pass
 ‘...we will pass by the arroyo (lit. where the land is chipped)...’ (RM 6/26/06 3)

(263) ...*taax mos xepe quih i-teel com*
 dem so seawater DEF.ART.SG.UNSPEC 3.POSS-edge DEF.ART.SG.lie
i-ti c-aa...
 3.POSS-on SBJ.NMLZ-be.LOC
 ‘...but it’s on the beach...’ (AIM 6/18/07_KinoNuevo)

The process of enriched composition described above regarding the interpretation of *eenim cop* and *hast cop* is also applicable to the interpretation of the other types of complex landscape terms, not just ones involving substance terms and determiners. However, in the cases of these other types of landscape terms, the item that selects for the object interpretation of the substance term is the verb stem of the nominalized verb form or the stem of the relational noun. The processes of type coercion from a mass to object interpretation are, otherwise, very similar. This will be discussed further in Chapter 7.

7 Lexicalization in the landscape domain⁵⁵

This chapter examines the ways in which different kinds of geographic entities, such as mountains, hills, streams, islands, forests, etc., are lexicalized in Seri. Of particular interest in this chapter are the structural patterns found among terms used to describe geographic entities. There are two structural classes of landscape terms: simple (monomorphemic) and complex (analyzable) terms. Further characteristics of these types with multiple examples of each type are provided in the sections that follow. At the end of this chapter, it should be clear that there is a propensity for the lexicalization of kinds of landscape objects in complex terms. In fact, given the discussion in Chapter 4 on noun morphosyntax, it should also be evident that complex nominal expressions are prevalent in the Seri nominal lexicon.

7.1 Structure of landscape terms

Landscape terms in Seri can be sorted into two types based on their structural properties: simple and complex. An exception to this is the structural pattern exhibited by terms which refer to natural assemblages of vegetation, discussed in section 7.5. Some examples of simple landscape terms, which are monomorphemic and unanalyzable, include *xatj* ‘reef’ in (264), *caail* ‘playa’ (dry lakebed) in (265) and *xtaasi* ‘estuary’ in (266).

(264) ...*taax* *ano* *sihca* *xatj* *quij*.
 there 3.POSS.in IRR.be.LOC reef DEF.ART.SG.sit
 ‘...there will be the reef.’ (GHF 7/2/06 1)

⁵⁵ Much of the content of this chapter comes from O’Meara and Bohnemeyer (2008).

(265) ...*caail quij* *hax* *quih*
 playa DEF.ART.SG.sit freshwater DEF.ART.SG.UNSPEC
t-poct *ha* *qu-ij* *iha...*
 REAL.DEF-full ? SBJ.NMLZ-sit DECL
 ‘...the playa [dry lakebed] is full of water...’ (MLA 11/29/08 3)

(266) *Xtaasi quij* *xepe* *c-aacoj* *com* *i-iqui*
 estuary DEF.ART.SG.sit seawater SBJ.NMLZ-big DEF.ART.SG.lie 3.POSS-toward
c-oocp *iha.*
 SBJ.NMLZ-emerge DECL
 ‘The estuary is connected to the sea.’ (Landscape_LexRelEli AIM)

Simple landscape terms are discussed toward the end of this chapter, in section 7.6, in more detail. Simple terms are not presented until the end of the chapter due to my hypothesis regarding the role of simple terms in the landscape domain: simple terms do not lexicalize the most basic concepts of the landscape domain, but instead seem to lexicalize concepts that are not covered by the system of complex terms. There seems to be a mismatch between basic in the sense of morphologically and phonologically basic and basic in the hierarchy of concepts. As such, there are significantly fewer simple terms than there are basic terms. Consequently, the discussion of simple terms comes after the discussion of complex landscape terms. The remainder of the chapter is primarily dedicated to the structure and semantics of complex landscape terms, as well as expressions for natural assemblages of vegetation (section 7.5) and exceptions to the complex landscape term word formation patterns (section 7.7).

One of the main characteristics of complex landscape terms is that they contain one of four ‘classificatory’ substance terms listed below.

(267) Classificatory substance terms:

- (a) *hant* ‘earth’
- (b) *hast* ‘stone’
- (c) *hax* ‘freshwater’
- (d) *xepe* ‘sea water’

I consider these lexical items classificatory due to the fact that all complex landscape terms involve one of these terms, which in most cases is the syntactic head of the complex term. As such, all landscape objects which are named by complex landscape terms are classified as being related to one of the four substances lexicalized by these terms. Generally, though not always, this means that the object either literally or metaphorically consists of the substance in question. The classificatory substance terms occur in other complex nominal expressions in Seri and are not exclusive to landscape terms. The defining characteristic of a landscape term in Seri is not that it contains a classificatory substance term, but rather, that it describes a kind of geographic entity. However, the head of complex nominals outside the landscape domain are not restricted to the four substance nouns that occur in landscape terms.

In addition to one of the classificatory substance terms, complex landscape terms contain a dependent element that serves to narrow down the possible interpretation of the landscape term. There are three types of dependent elements that occur in complex landscape terms: a) a definite article conflating posture or motion meanings; b) a nominalized form of a verb, usually an intransitive verb; c) a relational noun. All of these combinations can be interpreted compositionally, as noun phrases. But, as shown below, many – possibly all - complex landscape terms of all three types have non-compositional, lexicalized interpretations as well. This dissertation makes the methodological decision to treat all complex landscape terms as complex lexical items,⁵⁶ even though the existence of non-compositional interpretations has not been proven for all items. This decision is motivated by the research focus on the linguistic resources employed in the landscape

⁵⁶ By ‘lexical item’ I do not mean something like the notion ‘listeme’ that is proposed by Di Sciullo and Williams 1987, but rather by ‘complex lexical item’ I mean something more along the lines of a syntactic unit that is larger than a (monomorphemic) word.

domain in Seri: to the extent that complex landscape descriptors are licensed by the morphosyntax of the language, they require no further discussion beyond what has been said about the constituents involved and the syntactic constructions that combine them in Chapters 4 and 6. It is only the role complex terms play in the Seri lexicon that needs further attention.

Classificatory substance terms, which serve as the heads of complex landscape terms, lexicalize substances. In their most basic semantic representation and when used on their own they are mass nouns. Their reference is cumulative (Quine 1960; Link 1983) and divisive (ter Meulen 1980), in other words, the sums and parts of possible referents of these terms are themselves also possible referents of these terms. Example (268) provides an instance of *hax* ‘freshwater’ used on its own without a determiner or any further modification. This results in an interpretation of *hax* referring to the substance of freshwater.

(268) *Hax c-actim quij tiix hax iha.*
 freshwater SBJ.NMLZ-cut DEF.ART.SG.sit DEM freshwater DECL
 ‘The lake (lit. water that is cut) is water.’ (OPT 6/28/07)

Only one of the classificatory substance terms has a plural form, namely, *hast* ‘stone’.

The plural form *hasatoj* ‘stones’, which is exemplified in (269), coerces an object interpretation from a substance interpretation of the nominal in a similar way that the co-occurrence of a substance term and a definite article does (see the discussion of coercion in section 6.3).

(269) *Hasatoj c-camla coi co-hp-si-talháa ha*
 stone.PL SBJ.NMLZ-shiny.PL DEF.ART.PL OBL-1-IRR-sell DECL
toc cō-m-oii.
 there OBL-RP-be.LOC.PL
 ‘I am going to sell those shiny rocks.’ (Moser and Marlett 2005: 165)

In the following sections, I discuss the different structural patterns that exist in complex landscape terms as a result of combining a classificatory substance term with a definite article, a nominalized verb form or a relational noun. I also discuss the construction used for referring to natural assemblages of vegetation.

7.2 Classificatory substance term + definite article

Landscape objects can be described by expressions that contain a classificatory substance term followed by a definite article derived from nominalized forms of one of the posture verbs ‘sit’, ‘stand’ or ‘lie’ or one of the motion verbs ‘go’ or ‘come’ (see Chapter 6 for further discussion of the definite article system in Seri). The landscape terms *hast cop* ‘mountain’, *hant com* ‘ground’, *xepe com* ‘sea’, *hast com* ‘mountain range’,⁵⁷ which instantiate this type of complex landscape term, are illustrated in examples (270)-(272).

(270) *Hast cop* *hant com* *ano*
stone DEF.ART.SG.stand land DEF.ART.SG.lie 3.POSS.in
moca *ha.*
toward.SBJ.NMLZ.move DECL
‘The mountain comes from the ground.’

(271) *He xepe com* *i-ti* *qu-ij* *iha.*
I seawater DEF.ART.SG.lie 3.POSS-on SBJ.NMLZ-sit DECL
‘I am at sea (when in a boat).’

(272) ...*hehe an* *xah hast com* *i-hiin* *hant taax*
wood 3.POSS.area and stone DEF.ART.SG.lie 3.POSS-place.near land DEM
i-ti *ha-t-oii* *toc ha-t-oii* *ma...*
3.POSS-on 1.PL-REAL.DEP-stand there 1.PL-REAL.DEP-stand DS
‘...we were living there in the desert on the side of the mountains...’
(MLA 5/30/07 1)

⁵⁷ Throughout this dissertation I provide English translations for Seri words or expressions. By providing these translations, I do not mean to imply that Seri people conceptualize particular entities in the same way that an American English speaker does. For instance, I do not mean that the concept lexicalized by *hast cop* in Seri has a one-to-one correspondence with the concept lexicalized by *mountain* in English.

There is no landscape descriptor that combines *hax* ‘freshwater’ with one of the definite articles. This is the only classificatory substance term that does not combine with a definite article, resulting in a landscape descriptor. This might have to do with the fact that there are no permanent lakes or freshwater lagoons in the Seri territory, but this cannot be true since there *is* a complex expression which is used to describe lakes or freshwater lagoons, *hax cactim* ‘lake’ (lit. land that is cut) (see example (268)); but this expression involves a nominalized verb form. Nevertheless, *hax* plays a significant role as a classificatory substance term in complex landscape terms, as can be seen in the examples that follow.

The semantics of the combinations of a classificatory substance term with posture/motion-root-based definite articles involves a semantic operation henceforth called, for ease of reference, **operation 1**. This is the type of coercion operation discussed in detail in section 6.3 with respect to an example outside the landscape domain, *eenim cop* ‘knife’, literally ‘standing metal’. The substance term contributes the information regarding the material the landscape entity is comprised of (or is somehow related to) and the definite article coerces an interpretation of a kind of object that consists of that particular substance. The articles derived from posture verb roots classify animate beings with respect to the posture that they are in and inanimate beings with respect to their disposition (especially support and orientation; see Chapter 6 for further discussion) and, indirectly, spatial properties such as shape and axial structure. The articles that are derived from motion verbs classify animate beings with respect to their actual trajectory and direction of motion and inanimate beings with respect to some kind of metaphorical or “fictive motion” (Talmy 1996). The object denotations of the nominal expressions in

examples (270)-(272) are a consequence of the selection restrictions that are imposed by the posture and motion verbs and the articles that are derived from them. I assume that only objects, as opposed to the substances that such objects consist of, can have shapes, spatial boundaries or trajectories. This is the case even in cases where the spatial boundaries of such objects are fuzzy and not well-defined or dynamic, as is the case, for instance, with such geographic entities as mountains or the sea. Consider the German utterance provided in (273), which contains a form of the positional verb *stehen* ‘stand’.

(273) *Das Mehl stand auf dem Tisch.*⁵⁸
 the flour stood on the table
 ‘The flour was on the table.’

The interpretation of this utterance requires coercion, in that one has to assume that it was a bag or can of flour that was on the table, or that the flour had somehow hardened into a block. If the flour was heaped onto the table in a little pile or spread out across the table, it would be unacceptable to describe its disposition using the verb *stehen* ‘stand’. For similar reasons, I argue that in order for complex landscape terms to be interpreted as they are in Seri, coercion of the classificatory substance terms from a substance to object interpretation is required.

However, an object interpretation that arises out of the combination of a substance term and a definite article, involving operation 1, does not necessarily result in a landscape term. See example (274) for an instance of an expression that contains a substance term and a definite article which does not refer to a geographic entity.

(274) *hax* *cop*
 freshwater DEF.ART.SG.stand
 ‘freshwater (in a cup)’

⁵⁸ Thanks to Jürgen Bohnemeyer for this example.

When the substance term *hax* ‘freshwater’ combines with the definite article *cop*, the only possible interpretation regarding the configuration of the water is that it is in some kind of container such as a cup or a barrel. The reason that the combination of *hax* ‘freshwater’ and the definite article *cop* results in the interpretation of the freshwater in a cup is due to the fact that cups are taller than they are wide.

Complex landscape terms of all types are idiomatic collocations whose denotations are restricted in the mental lexicon to a particular kind of geographic entity such as a landform, a body of water, a natural assemblage of vegetation, etc. However, it is important to note that some complex landscape terms (or the noun phrases on which they are based) can be interpreted compositionally. The structure of complex landscape terms is readily analyzable by native speakers of Seri and the meanings of the parts of complex terms are identifiable. For example, on a compositional interpretation, *hast com* ‘mountain range’, describes a kind of object that consists of the material stone and could be said to be “lying” in Seri, whereas *hast cop* ‘mountain’ describes a kind of stone object that could be said to be “standing”. The following example of a compositional interpretation of *hast com* comes from a story where giants take a big long *metate* (grinding stone) and try to drop it on some people.

(275) *Hast com* *ica s-ah-jiit itax, qu-iim.*
stone DEF.ART.SG.lie DIR IRR-CAUS-fall AUX SBJ.NMLZ-sleep
‘He was asleep while the stone was about to be dropped on him.’ (Moser and Marlett 2005: 884)

The lexicalized interpretation of *hast com* in (275) seems to not be available, since the giant is described as picking up a grinding stone and not a mountain range, which would be a very difficult entity (or collection of entities) for even a giant to pick up and drop on someone else. However, when native speaker consultants were asked during elicitation

whether someone could use *hast com* in reference to a rock lying on a table top, they said that such a description would not be acceptable.

An example from outside of the landscape domain provides an instance where the extension of this term under its non-compositional interpretation is not necessarily included in the extension under its compositional interpretation. This is shown in (276) with *zixcam caacoj* ‘giant sea bass’, which literally means ‘fish that is big’.

(276) *Zixcam c-aacoj com hax cöyiin oo.*
 fish SBJ.NMLZ-big DEF.ART.SG.lie very DP.fat.short PART
 ‘The giant sea bass (lit. fish that is big) is short and fat.’
 (Marlett and Moser 2005: 291)

Although the expression used to refer to a giant sea bass [*Stereolepis gigas*] literally means ‘fish that is big’, it can be said that a giant sea bass is short and fat.

Further, as is discussed in Marlett (ms. 274), definite complex nominal expressions tend to contain the definite article *quih*, which is unspecified for posture or motion, in certain internal positions. Marlett indicates that this can be done to emphasize the relationship of a nominal and the nominalized verb form modifying it (ms. 274). The definite article *quih* is found in internal positions of noun phrases as a linker article (Marlett 2005). In these cases, *quih* does not contribute any semantic information to the nominal it combines with, but rather, seems to play the role of a default article. In some cases, this seems to indicate that the expression has a non-compositional interpretation. This seems to be the case with some of the landscape terms such as *hast quih iyat* ‘summit (of a mountain)’, literally ‘stone’s point’ and *xepe quih iteel*⁵⁹ ‘beach’, literally ‘seawater’s edge’. For further discussion of this matter, see Chapter 9.

⁵⁹ This landscape term also appears as *xepe iteel*, without *quih*. There does not seem to be a meaning difference between the two terms.

7.3 Classificatory substance term + nominalized verb form

Landscape objects can be referred to by expressions that contain a classificatory substance term followed by a nominalized verb form. This verb form is most commonly a subject nominalization or oblique nominalization of a stative intransitive verb form which modifies the classificatory substance term as a kind of relative participle (see Chapter 4 for further discussion of nominalizations in Seri). These verb forms provide the denotation of the property of being a participant in the eventuality that is lexicalized in the verb root.

(277) ...*hant i-pzx tintica an ih-p-aa...*
 land OBL.NMLZ-chipped DEM.MED.go 3.POSS.in 1-IRR-pass
 ‘...we will pass by the arroyo (lit. where the land is chipped)...’ (RM 6/26/06 3)

(278) *Hast cop i-xaai tintica hant*
 stone DEF.ART.SG.stand 3.POSS-base DEM.MED.go land
c-ascax quih x-otxo.
 SBJ.NMLZ-torn.PL DEF.ART.SG.UNSPEC EMPH-many
 ‘The foothill of the mountain has many drainages (lit. land that is torn).’ (MLA 12/8/08)

Hant ipzx ‘arroyo’ (dry riverbed) in (277) and *hant cascax* ‘drainages (in the mountains)’ in (278) refer to the same type of geographic feature, namely, drainages. However, a Seri speaker cannot refer to a drainage that is located in the foothills of a mountain or in a mountain itself with the term *hant ipzx*, but rather must use the expression *hant cazx* (the singular form of *hant cascax* or *hast iizx* ‘rock fissure’). Even if the speaker is referring to a continuous drainage which runs from a mountain down onto the horizontal plane, the part that is elevated as a result of being part of the hill is called *hant cazx* and the part that extends onto the desert terrain is referred to as *hant ipzx*. Referents of *hant cazx* turn into referents of *hant ipzx* once they hit the *hant ihiiipi* ‘ground’ (lit. where the land is good), so to speak.

When a riverbed has water flowing in it, Seri speakers refer to it as *hax quimej* ‘river’ (lit. freshwater that flows) as in example (279).

(279) *Hax qu-imej quih taax hax*
 freshwater SBJ.NMLZ-flow DEF.ART.SG.UNSPEC DEM freshwater
quih cö-t-imij, cö-c-ajöc
 DEF.ART.SG.UNSPEC OBL-REAL.DEP-flow OBL-SBJ.NMLZ-always
oo ha.
 PART DECL
 ‘Water always flows in the river.’ (AIM Landscape LexRel)

The instance of *hax quimej* in the example above brings up some interesting issues regarding this nominal expression’s referential properties, especially as compared with the semantics of the English term *river* that I am using as its gloss. For instance, in English you can say *The river is flowing*, where *river* refers to the water that is in the riverbed and not the riverbed itself. However, you can also say *The water is flowing in the river* where *river* refers to the container of the water. The Seri term *hax quimej* is in some sense similar to the English term *river* in that it can refer to the water in the river and the river itself, but only when there is water flowing in it. In order to refer to the riverbed specifically when there is no water in it, a different term is used, namely *hax ihmij*, which is illustrated in example (280).

(280) *Hax ih-imij tintica hant i-pzx*
 freshwater OBL.NMLZ-flow DEM.MED.go land OBL.NMLZ-chipped
com oo zo haa ha.
 DEF.ART.SG.lie PART INDEF.ART SBJ.NMLZ.be DECL
 ‘The bed of the river (lit. where the freshwater flows) is part of the arroyo (lit. where the land is chipped).’ (OPT 6/28/07)

In this case, the lexicalization strategy of landscape terms that involves nominalizations allows for the fine-grained distinction between *hax quimej* ‘river’ and *hax ihmij* ‘riverbed’ with only the change of one morpheme – the nominalizer prefix, from subject nominalizer to oblique nominalizer, respectively. More specifically, the oblique

nominalization in *hax imimij* ‘riverbed’ causes the possible referents of this term not to be made up of the substance lexicalized by the classificatory substance term that heads this expression, *hax* ‘freshwater’, but rather, a place where that substance could occur in a manner that is encoded by the verb stem *-imij* ‘flow’. This example is of particular interest, in that it illustrates a complex landscape term that does not refer to an entity that is composed of the substance lexicalized by the classificatory substance term.

Further landscape terms which involve a classificatory substance term and a nominalized verb form include the following two terms that refer to dunes, *hant queemej* in (281) and *hant quipcö* in (282).

(281) *Hant qu-eemej com in-s-yaai pix...*
 land SBJ.NMLZ-move.slowly DEF.ART.SG.lie 2-IRR-go.to DOUBT
 ‘If you want to go to the dunes (lit. land that moves slowly)...’ (GHF 7/2/06 2)

(282) *Hant qu-ipcö quih yeen i-icp*
 land SBJ.NMLZ-thick DEF.ART.SG.UNSPEC 3.POSS.face 3.POSS-side
quih hant qu-ipcö hantx moca ma
 DEF.ART.SG.UNSPEC land SBJ.NMLZ-thick base toward.SBJ.NMLZ.move DS
x, comcaac quih i-ti y-aii...
 UNSPEC.TIME seri.people DEF.ART.SG.UNSPEC 3.POSS-on DP-be.LOC
 ‘The front of the dune (lit. face of land that is thick) is where the Seris of old times lived...’ (MLA 7/21/07 2)

Both of the terms listed above which are used to refer to dunes contain the classificatory substance term *hant* ‘land’, reflecting the fact that dunes are made up of land or earth material. However, these terms differ in the verb stem that occurs in the nominalized verb form that modifies *hant*. The verb stem *-eemej* ‘move slowly’ in *hant queemej* relates to the way in which the shape of the dunes change over time due to wind and water erosion. In contrast, the verb stem *-ipcö* ‘thick’ in *hant quipcö* relates to the shape of dunes. Elicitation conducted thus far indicates that these terms are synonymous. I have yet to

determine if there is a particular type of dune which can fall in the extension of one of the terms and not the other.

The interpretation of the landscape terms that are described in this section involve a similar semantic operation as the interpretation of landscape terms which are made up of a classificatory substance term and a definite article. However, in this case, it involves coercion from a substance to object interpretation based on the selection restrictions of the nominalized verb form and not by the selection restrictions of a definite article (or more accurately, the selection restrictions of the verb that the definite article is derived from). Within the context of operation 1, the substance term denotes the material that the geographic entity consists of, but within the context of the cases described here, the substance term can denote the material that the entity consists of or something different, for example, the material that exists in the place that is denoted by the landscape term as in *hax ihmij* ‘river’. However, there is the added complication with the kinds of complex nominal expressions discussed in this section in that their semantic interpretations are not only determined by the selection restrictions imposed by the nominalized verb form, but also by the added selection restrictions imposed by the determiner that accompanies this expression, in case this determiner is derived from a verb root, such as *com* in (281) above, as opposed to *quih* in (282). Almost all nominals require a determiner when they head a noun phrase. As discussed in Chapter 4, Seri has definite articles and demonstrative adjectives that are derived from nominalized verb forms. The semantics and selectional restrictions that the determiners impose on nominals that occur with them are discussed in more detail in Chapter 6.

I discuss examples of this type of complex landscape term in more detail by focusing on a few examples of this type and the interpretation of these terms. Let us begin with *hant queemej com* ‘dune’ (lit. land that moves slowly), which is illustrated above in example (281). The substance term *hant* ‘land’ refers to the substance of the landscape object. The verb stem *-eemej* ‘move’ of the subject nominalized verb form *queemej* ‘that which moves’ requires that the mass term that it modifies type-shift from a substance to an object denotation, in accordance with the stem’s selection restrictions. The reason for the type-shifting in this case is that presumably in order for a substance to move, it must be conceptualized as an object with spatial boundaries of some sort. Additionally, the set of possible referents of the complex landscape term are further narrowed down by the fact that they can only be entities for which it is true that they are participants in the eventuality encoded by the verb stem of the nominalized form, which is in this case *-eemej* ‘move’. However, this case is slightly different from cases involving posture roots. The selection restrictions of *-eemej* ‘move’ are different from those of posture roots in that *-eemej* does not require that the term it modifies have a permanent shape, but rather, that it have boundaries. To complicate matters further, it is not clear whether Seri speakers or English speakers, for that matter, treat dunes as concrete objects. As a result, it is not entirely clear that substance to object coercion is required in this case. Consequently, this matter is left open for further research.

As mentioned in Chapter 4, which discusses general aspects of Seri grammar, almost all nominals require a determiner when they head a noun phrase. This means that the semantics of the determiner also needs to be accounted for in these complex nominal expressions. In the case of *hant queemej* ‘dune’ in example (281), the definite article

com, which is derived from the posture verb *-oom* ‘lie’, accompanies it. This combination of the definite article involves operation 1, which was introduced in section 7.2, as it pertains to the combination of a classificatory substance term and a definite article.

Similarly, if we look at another complex landscape term of this type more closely, it becomes clear that the process of interpreting these terms is more complex than it appears at first glance. Take, for example, the complex landscape term *hax ihmij tintica* ‘riverbed’ (lit. freshwater where it flows), which is exemplified in (280). The classificatory substance term here does not refer to the material or substance that makes up the landscape object. Instead, it refers to the substance that is generally located inside of the landscape object, in this case the water that could generally flow in the riverbed. The oblique nominalized verb form *ihimij* ‘where it flows’ contributes the information regarding the location of the usual or possible flow of the freshwater. The nominalization makes reference to a location, something that has definite, although potentially somewhat fuzzy spatial boundaries. Regardless, its selection restrictions require that the entities that act as participants in the verb stem’s eventuality are of the type object, thus, involving the interpretation of the substance term to be type-shifted from a substance to an object.

Additionally, this nominal expression is accompanied by the definite article *tintica* derived from the motion verb *-ntica* ‘go away’. The riverbed is not actually moving; rather, *tintica* invokes an interpretation involving “fictive” motion (following Talmy 2000) or a metaphorical interpretation of movement along the lines of the English utterance *There is a clothesline that runs along the side of house*. In the English sentence, the clothesline is not literally running, but rather is perceived as extending along a

trajectory that extends along a path, similar to that of a path of motion. More specifically, the use of *tintica* in this case provides an interpretation that the referent, in this case the riverbed, extends along a trajectory that goes away from a point of reference.

7.4 Classificatory substance term + relational noun

Landscape objects can be referred to by expressions that contain a classificatory substance term followed by a relational noun. Relational nouns in Seri lexicalize types of individuals with respect to a particular conceptual relation to other individuals. As discussed in Chapter 4, many relational nouns in Seri are inalienably possessed and thus require a possessive prefix that indicates the person and number of the possessor. The relational nouns that occur in landscape terms make reference to generalized spatial object parts such as edges, tops, bottoms and interstices, as is illustrated *-teel* ‘edge’ in (283), *-tacl* ‘top’ in (284), *-pot* ‘bottom’ in (285) and *-icot* ‘place between’ in (286).

(283)...*taax mos xepe quih i-teel com*
 DEM so seawater DEF.ART.SG.UNSPEC 3.POSS-edge DEF.ART.SG.lie
i-ti c-aahca...
 3.POSS-on SBJ.NMLZ-be.LOC
 ‘...but it’s on the beach...’ (AIM 6/18/07_KinoNuevo)

(284)...*hast cap i-tacl hac*
 stone DEF.ART.SG.stand 3.POSS-on.top.of DEF.ART.SG.LOC
ano s-c-afp ha...
 3.POSS.in IRR-SBJ.NMLZ-arrive DECL
 ‘...if we want to go to the summit of the mountain...’ (RM 6/26/06 2)

(285)...*taax hant i-pot hax xepe com*
 DEM land 3.POSS-bottom freshwater sea DEF.ART.SG.lie
i-icp hac ic-aahca hac...
 3.POSS-toward DEF.ART.SG.LOC INTRANS.INF-be.LOC DEF.ART.SG.LOC
 ‘...there is a well on the side of the sea...’ (GHF 7/2/06 2 3)

(286)...*hast quih* *i-icot* *tintica* *tiix*
stone DEF.ART.SG.UNSPEC 3.POSS-place.between DEM.MED.go DEM
i-cozim *tintica* *an* *ihaiit*
OBL.NMLZ-hot DEM.MED.go 3.POSS.in ?
‘...we walked in the hot valley (lit. in between the stone)...’ (MLA 5/30/07_1)

As is the case with the other types of complex landscape terms, the ones discussed in this section are also lexicalized versions of compositional nominal expressions. The terms in this section contain a classificatory substance term which is frequently, but not necessarily followed by a determiner which is then followed by a relational noun that is possessed by the classificatory substance term, as in examples (283), (284) and (286). In complex landscape terms involving relational nouns, it is understood that the possessor of the relational noun is not itself a landscape term, but rather lexicalizes the substance which the geographic entity is made of or is somehow related to. For example, by itself *hast quih* in (286) is a mass term and means ‘stone’ not ‘valley’ or ‘mountain’. The definite article *quih*, which is derived from the general locative verb *-iih* ‘be located’, is unspecified for posture or motion.

An object interpretation of the classificatory substance terms is coerced by the combination with a relational noun. Because relational nouns denote object parts or spatial regions projected from object parts, they select for object-denoting possessors. The process of coercion results in the possessor nominals being interpreted as landscape entities, from which the part singled out by the relational noun is determined (e.g., the edge of the ocean in (283) and the interstice between mountains, i.e., a valley, in (286)). Similar to the other complex landscape terms, a compositional interpretation of the relational noun complex landscape terms is generally not available. For example, the compositional interpretation of *hast cap itacl* is the tip of anything that is made of stone.

Although one could think of scenarios where it would be possible to talk of the tip of an object made of stone, this expression seems to be a conventionalized way in which Seri speakers refer to a summit of a mountain. For some of the complex landscape terms, the possible compositional interpretations generally coincide with the actual conventional interpretation, e.g., this seems to be the case with *xepe quih iteel* ‘the sea, its edge’ in (283).

7.5 Natural assemblages of vegetation

In addition to the complex landscape term structures described above that involve one of the classificatory substance terms in combination with other lexical items, there is a productive means for talking about natural assemblages of vegetation (e.g., cardon cactus forests or mesquite forests) in Seri. This construction involves the term for the vegetation type or plant name followed by the relational noun *an* ‘area of’. Some examples of this kind of complex nominal expression include: *hehe an* ‘desert’ (lit. area of wood or tree) as in example (287) (which is example (272) repeated here), *haas an* ‘mesquite forest’ (lit. area of honey mesquite) as in example (288), *xaasj an* ‘cardon cactus forest’ in (289), and *pnaacoj an* ‘mangrove area’.

(287)...*hehe an* *xah hast com* *i-hiin* *hant taax*
 wood 3.POSS.area and stone DEF.ART.SG.lie 3.POSS-place.near land there
i-ti *ha-t-oii* *toc ha-t-oii* *ma...*
 3.POSS-on 1.PL-REAL.DEP-stand there 1.PL-REAL.DEP-stand DS
 ‘...we were living there in the desert on the side of the mountains...’ (MLA 5/30/07
 1)

(288)...*haas* *an* *z* *ano* *m-oom.*
 honey.mesquite 3.POSS.area INDEF.ART 3.POSS.in RP-lie
 ‘...there is an area of honey mesquite.’ (THF 7/9/06 7)

(289) *Hant qu-ipcö xaasj an com*
 land SBJ.NMLZ-thick cardon 3.POSS.are DEF.ART.SG.lie
cöi-y-amtxö hac...
 OBL-DP-straight.toward DEF.ART.SG.LOC
 ‘The cardon forest is straight behind the dune...’ (MLA 12/8/2008)

This construction can be used in order to refer to areas with many different types of vegetation, as long as the vegetation type that is included in the expression is the dominant vegetation type in the spatial region that is being referred to. This means of referring to spatial regions is particularly useful in the Seri territory as there are large expanses of desert area separated by the occasional mountain or mountain range. The areas of desert can be referred to by indicating the type of vegetation that covers them. The general term used to refer to the desert area (which is in opposition to the sea), without specifically referring to a particular region, is *hehe an* ‘desert’.

In addition to being used to describe areas which are densely covered by a particular vegetation type, this construction can be used to describe areas that are dominated by a particular physical property, as is illustrated in (290) with *coozalc an* ‘dune’.

(290) ...*c-oozalc an tintica i-izc*
 SBJ.NMLZ-have.ridge 3.POSS.area DEM.MED.go 3.POSS-front
mi-h-aao i-ti x...
 2-OBL.NMLZ-pass 3.POSS-on UNSPEC.TIME
 ‘...you will pass by the front of the dune (lit. area that has ridges)...’

In a similar fashion, if a speaker wishes to refer to the sea area that is exposed during low tide, they can use the term that refers to seawater, *xepe*, in combination with the relational noun *an* ‘area of’. This is illustrated in example (291). In this case it is not a spatial property that is being referred to by *xepe*, but rather the substance that generally occupies that spatial region (during high tide).

(291) *Hast ancoj com xepe an com*
stone 3.POSS.area.of.PL DEF.ART.SG.LIE seawater 3.POSS.area.of DEF.ART.SG.LIE
zo haa ha.
INDEF.ART SBJ.NMLZ.be DECL
‘The part of the beach that has lots of rocks is part of the sea area (during low tide).’
(Landscape_LexRelEli AIM)

This construction is also used outside of the landscape domain, in particular, for reference to some areas or parts of the body, as in *itj an (hac)* ‘genital region’ (lit. area of its lower trunk), *izaj an* ‘thoracic cavity’ and *isoj an* ‘intestines’ (lit. area of its body), as well as plant parts such as *imoz an* ‘center of a stem’ (lit. area of its heart), which is particularly used to describe the hearts of agave plants.

Finally, *an* can be used to refer to the interior portion of an object. This is illustrated in (292).

(292) *H-aaco quih an hac m-icópol.*
ABS.POSS-house DEF.ART.SG.UNSPEC 3.POSS.area.of DEF.ART.SG.LOC RP-dark
‘The interior of the house is dark.’ (Moser and Marlett 2005: 36)

This use of *an* does not seem to play a role in making reference to natural assemblages of vegetation or other geographic entities⁶⁰ and consequently, will not be discussed further here.

7.6 Simple landscape terms

This section provides a discussion for why some geographic entities get lexicalized by monomorphemic or simple landscape terms, as opposed to complex landscape terms. The majority of landscape terms in Seri are not monomorphemic, but rather, complex. The monomorphemic terms are not all of a certain type, for instance, they do not all refer to bodies of water. There does not appear to be a morphological explanation for why they

⁶⁰ However, one could use *an* in this way to talk about the interior of some geographic entities, for instance, one can say *zaaj an hac* ‘interior of a cave’ to refer to the inside of a cave.

Similarly, the simple landscape term *xatj* ‘reef’, which is illustrated in (294), is not easily classifiable with respect to one of the four substances that the classificatory substance terms make reference to.

(294) ...*taax ano s-ihca xatj quij.*
 there 3.POSS.in IRR-be.LOC reef DEF.ART.SG.sit
 ‘...there will be the reef.’ (GHF 7/2/06 1)

During the elicitation of lexical relations within the landscape domain a native speaker provided me with the utterance exemplified in (295). He noted that one cannot say that *xatj* ‘reef’ is *hast* ‘stone’, but rather, one says ‘it is made of stone’. However, since this landscape feature is found in the sea, it seems different than the other types of landscape entities which are referred to with complex nominal expressions which include *hast* ‘stone’.

(295) *Xatj quij tiix hast quih c-haa ha.*
 reef DEF.ART.SG.sit DEM stone DEF.ART.SG.UNSPEC SBJ.NMLZ-be DECL
 ‘The reef is (made of) stone.’ (OPT Landscape LexRel)

One further note regarding *xatj* is that it can be used to refer to a bedrock outcrop, i.e, a large long and relatively flat stone formation that can be found in a streambed.⁶¹ An example of such a bed is illustrated in Image 1.

⁶¹ I only have one instance in my database of *xatj* being used to refer to a bedrock outcrop, but I did receive confirmation (with some hesitation) from another speaker that it was possible to use it to refer to such a landscape object. However, when the original occurrence was recorded, I mentioned the term to a few other speakers who were aware of the bedrock outcrop and they seemed to know what I was talking about.



Figure 4. Example of a bedrock outcrop in Seri territory

This nominal is also included in a body part term, namely, *itooa xatj* ‘foot’ (lit. leg’s reef). This suggests that the denotation of *xatj* has more to do with spatial properties such as geometrical properties and shape. For instance, it can be used to refer to something that has the form of being long, rigid and somewhat raised.

Another landscape term which is synchronically unanalyzable is *xtaasi* ‘estuary’, which is shown in example (296).

- (296) *Ox t-pacta ma x xtaasi zo haa*
 thus REAL.DEF-be DS UNSPEC.TIME estuary INDEF.ART SBJ.NMLZ.be
t-ij, i-isax quih i-ic cöihiipe
 REAL.DEF-sit 3.POSS-spirit DEF.ART.SG.UNSPEC 3.POSS-side OBL.NMLZ.good
hant c-acitic cah m-ihiiha, hant taax ita haxoj m-ac-oom.
 land SBJ.NMLZ-soft DEF.ART.SG.FOC RP-pure land DEM ? shore RP-CAUS-lie
 ‘Then there is an estuary there that is good for beaching (the boat) because it is pure sand (lit. land that is soft).’ (FMH 6/15/07 3)

As mentioned in Chapter 2, the only estuaries that exist in the Seri territory are high-saline inverse estuaries. In other words, the estuaries there are not places where a river flows into the ocean, but rather where seawater flows into a semi-enclosed body of water.

There is actually no source of freshwater associated with these estuaries. The salinity of the water in the estuary is higher than the salinity of the seawater that feeds the estuary. However, as (296) shows, a possible referent of *xtaasi* is not only characterized by the fact that it involves saltwater, but also by the fact that it is a sandy (as opposed to a rocky) place, which provides it with the property of being a good location to beach a boat. Additionally, the tides in the Sea of Cortez have a large range. Consequently, there are times during the year when the tide is very low and there is more sand exposed in the area of the estuary and other times when the tide is high and the estuary extends past the mangroves onto the flats that surround them. It follows that it is difficult to classify a possible referent of *xtaasi* with respect to whether it consists of the material denoted by any of the four classificatory substance terms.

Finally, there is the simple landscape term *yaiij*, which is illustrated in example (297). This term is used to refer to long sand dunes or shoals (following Moser and Marlett 2005: 604).

(297) *Hanso hant ih-t-tápcax, yaiij com i-ti*
 just land 1-REAL.DEF-slip.ITER dune DEF.ART.SG.lie 3.POSS-on
cöi-qu-íipax ih-yo-m-á.
 OBL-SBJ.NMLZ-climb 1-DP-NEG-know
 ‘I just slipped and couldn’t climb the sand dune.’ (Moser and Marlett 2005: 260)

This landscape term is a little different from the other simple landscape terms discussed earlier in this section. The reason for this is that there are various terms in Seri which can be used to refer to dunes, not just this one, and the other terms which can make reference to dunes are not simple landscape terms. The other terms that make reference to dunes are *hant queemej* lit. ‘land that moves slowly’, *hant quipcö* lit. ‘land that is thick’ and *coozalc an* lit. ‘area that has ridges’. At this point in time, it is not entirely clear what the different

referential properties are that exist between these different terms. The three complex terms encode information regarding the geomorphological properties (e.g., moving slowly), material consistency (density) or more general spatial properties (e.g., having ridges) of the landscape entity. The simple term, in a less transparent way, also reflects some information about the spatial properties of its possible referents in that it combines with the definite article *com*, which is derived from the posture verb *-oom* ‘lie’. The nominal’s co-occurrence with this article entails that the referent has a longer horizontal axis than vertical one (otherwise the selection would be for *cop*, derived from *-oop* ‘stand’).

7.7 Exceptions to the two types of landscape terms

There are a few landscape terms which are not monomorphemic, but do not have the structure which has been discussed in the previous sections, in particular, they do not contain one of the four classificatory substance terms. These terms are nominalizations or possessed nominals.

Consider, for example, the landscape term *caail* ‘playa’ (a dry lakebed), which is a subject nominalization of the verb *-aail* ‘spacious and open [place]’ (Marlett and Moser 2005: 57). The landscape term *caail* makes reference to an ephemeral lake – an entity whose properties change throughout time. More specifically, the lakebed can be dry, but it can also fill with water after a significant rain event.

(298) ...*caail quij* *hax* *quih*
 playa DEF.ART.SG.sit freshwater DEF.ART.SG.UNSPEC
t-poct *ha* *qu-ij* *iha...*
 REAL.DEP-full ? SBJ.NMLZ-sit DECL
 ‘...the playa is full of water...’ (MLA 11/29/08 3)

In the case of *caail*, and many of the other complex landscape terms of this type, it seems that the explanation for why there is no classificatory substance term is similar to the explanation for why simple landscape terms do not participate in the complex landscape term paradigm, namely, the possible referents of these terms are difficult to classify with respect to the denotation of any of the four classificatory substance terms. The verb stem that *caail* is derived from subcategorizes for a place, not a substance or an object. Consequently, it cannot combine with one of the classificatory substance terms.

In addition to the terms discussed above, there are some terms which similarly are not monomorphemic, but these terms appear to contain grammaticalized forms of complex landscape terms. This is a small class of terms, containing only two items at this point: *hantaacoj* ‘continent’ (derived from *hant caacoj* ‘land that is big’) and *hanteeno hax* ‘water source’ (derived from *hanteen* ‘ground’, which is somehow derived from *hant* plus something else).

8 Taxonymic structures in the landscape domain

This chapter discusses the taxonymic relations that exist in the Seri landscape domain.

Taxonomy is the hierarchical organization of linguistic terms that reflects the hierarchical *taxonomic* organization of the concepts expressed by these terms (Cruse 1986).

Intensionally, this organization involves inclusion relations among the properties on which the conceptual categories are based; extensionally, it is based on inclusion relations between the sets denoted by the terms – i.e., the sets of individuals or entities grouped together by the concepts. For instance, the utterance *A schnauzer is a kind of dog* is a taxonymic statement that expresses a hierarchical relation between a superordinate term – the hypernym *dog* – and a subordinate term – the hyponym *schnauzer*.

Intensionally, this statement is true because the sum total of the properties that together constitute the conceptual category expressed by *dog* is properly included in the sum total of properties that together constitute the conceptual category expressed by *schnauzer*.

Extensionally, the statement is true because the set of individuals that can be referred to as *schnauzers* is properly included in the set of individuals that can be referred to as *dogs*.

Below, data is presented that illustrates some of the kind-of relations that exist in the landscape taxonomy of Seri. I use landscape terms as the window into landscape categories, and as such, I discuss the taxonymic relations that hold between landscape terms as a window into the taxonomic relations that hold between conceptual landscape categories in the minds of Seri speakers.⁶² In concluding the discussion of taxonomy, the final section of this chapter presents theoretical questions relevant to research in

⁶² There has, however, been recent evidence that has shown that taxonomy is not necessarily homomorphic with taxonomy (Malt, Sloman and Gennari 2003). In response, language reflects one particular organization of conceptual categories that is available to speakers of a language. It has been shown that speakers can conceptualize the same entities in different ways for different purposes (Labov 1973).

ethnophysiography and how the data presented in this chapter address some of these questions.

8.1 Background

During the middle of the 20th century, many anthropological linguists were using componential analysis (CA) as a way to investigate native systems of categorization. Researchers were particularly interested in understanding how speakers of different languages and members of different cultures categorize objects in different conceptual domains. CA was used in the seminal work by Lounsbury (1969 [1964]) on kinship terms and in Conklin's description of Hanunóo pronouns (1962). In studies involving CA, the primary goal is to discover and represent the most basic properties involved in the classification of items in a particular conceptual domain. The focus in CA is on paradigmatic contrasts between items in the conceptual domain under investigation, for instance, in the way that the pronouns *he* and *she* in English contrast in the feature of gender (Foley 1997: 112).

At around the same time that some researchers were using CA, an additional approach to investigating systems of categorization arose with the study of local plant and animal taxonymies and taxonomies, also known as folk taxonomies, as part of an ethnoscientific approach. One of the earliest uses of taxonymies is likely that found in Conklin's (1954) unpublished dissertation, where he compares Hanunóo botanical classification with scientific botanical classification. The first published works involving this method in ethnosemantics include those from Conklin (1962) and Frake (1961, 1962).

Taxonomic classification involves the hierarchical classification of items based on the properties of these items. The structure that comprises the taxonomy is based on inclusion relations between categories, as opposed to CA, which can only express conjunction between categories. The terms that appear lower in the taxonomic classification are said to have a kind-of relationship with the terms that are located higher up in the hierarchy. Terms on the same level of the hierarchy are in contrast with each other and this relation can be called co-taxonomy. Some noteworthy examples of taxonomies include the Linnaean taxonomy of biological species, the updated post-Darwin version of the taxonomy of species (e.g., Woese and Fox 1977) and Frauke's (1961) taxonomy of diseases among the Subanon, which is based on the criteria of diagnosis of the diseases and their treatment. In the case of Seri, there is an extensive ethnobotany which contains ethnographic descriptions of Seri life (Felger and Moser 1985).

This line of research has been motivated by an interest in understanding how people categorize the world around them and to investigate the semantics of the terms that are used to express these categories. Berlin claims that cross-cultural regularities in the way people categorize plants and animals are due to perceptual properties of plants and animals and not because of their potential utility or cultural significance (Berlin 1992). This brings up some questions for ethnobiology, namely, what do classifications of the landscape look like in individual languages and what kinds of regularities exist when we compare landscape classifications cross-culturally and what is the basis for any such regularity? Does Berlin's claim regarding the way plants and animals are categorized have any bearing on the way people categorize the landscape? This chapter aims to present some groundwork in landscape taxonomy in Seri.

8.2 Collecting Seri data on taxonomy

In order to investigate taxonymic (and taxonomic) relationships in the landscape domain, I further probed the landscape terms I collected, as described in Chapter 6, for their lexical semantic properties. Working with various native speaker consultants, I developed an elicitation frame based on the methods discussed in Cruse (1986: 136-156). This frame was designed to elicit taxonymic relations between terms. For instance, I would begin elicitation with each native speaker consultant with a question equivalent to the English, *An X, what is it?*, where *X* is the term under investigation. The response to the question returns an utterance like *A bird, that is an animal*. Elicitations began with natural kinds, such as animals and plants, in order to illustrate to the native speaker consultant I was working with the type of relation that I was interested in discovering. An example of a question and answer pair is provided in (299) and (300) respectively.

(299) *¿Ziic quij, tiix áz haxéhe?*
bird DEF.ART.SG.sit DEM what
'A bird, what is it?' (AIM LandscapeLexicalRelaitons)

(300) *Ziic quij, tiix zix c-cam iha.*
bird DEF.ART.SG.sit DEM thing SBJ.NMLZ-live DECL
'A bird, that is an animal.' (AIM LandscapeLexicalRelaitons)

Verbless predicative clauses, which do not include a copula, such as that provided in (300) are typically used in Seri to indicate membership in a class (Marlett ms. 319).⁶³ For instance, the utterance provided in (301) means 'It is a knife', but cannot mean 'It is metal'. It seems that this construction is used for predications of kinds, as opposed to predications of substances.

⁶³ Marlett (ms. 319) also indicates that verbless predicative clauses are fairly common in Seri and that many expressions in English that involve an active verb are expressed by predicative clauses in Seri. These predicative clauses can contain as the predicative complement (underived) nouns, deverbal nouns and some adjectives.

(301) *Eenim iha.*
 metal DECL
 ‘It is a knife.’ (Marlett ms. 319)

The typical constituent order of such clauses is subject followed by the complement and a declarative marker.

After working on natural kinds, such as terms that refer to types of plants and animals, I moved on to elicit taxonomic relations between terms for artifacts. Some examples of this part of the elicitation are provided in (302) and (303).

(302) *Siimet quih tiix ziix ha-p-ahit iha.*
 bread DEF.ART.SG.UNSPEC DEM thing SBJ.NMLZ-PASS-eat DECL
 ‘Bread, that is food (lit. thing that is eaten).’ (OPT LandscapeElicitation 07)

(303) *Trooqui hizquih ziix c-atax iha.*
 car DEM.UNSPEC thing SBJ.NMLZ-go DECL
 ‘That car is a vehicle (lit. thing that goes).’ (AIM LandscapeLexicalRelations)

After working with artifact terms, I transitioned to landscape terms, explaining to the native speakers I worked with that I was interested in discovering similar kinds of relationships in the landscape domain as those we found out about in the other domains.

Some responses to the lexical elicitation task resulted in descriptions of properties of the landscape object that the landscape term under question refers to. In other words, speakers would provide characteristics of the landscape object instead of providing a superordinate term in the taxonomy. This is illustrated in (304) and (305).

(304) *Hant i-pzx tintica tiix*
 land OBL.NMLZ-chipped DEM.MED.go DEM
hax ih-imej iha.
 freshwater OBL.NMLZ-flow DECL
 ‘The dry riverbed (lit. where the land is chipped), that is where the freshwater flows.’ (AIM LandscapeLexicalRelations)

(305) *Hast cop hant com ano moca*
stone DEF.ART.SG.stand land DEF.ART.SG.lie 3.POSS.in toward.SBJ.NMLZ.move
ha.
DECL
‘The mountain came from the earth.’ (GHF LandscapeElicitation 05)

8.1. Landscape taxonomy in Seri – the data

While collecting landscape terms in Seri, there was a noticeable preponderance of complex landscape terms in the landscape domain (see the discussion in Chapter 7 for more details). Given that observation, I initially predicted that the classificatory substance terms would be a dominating factor in the taxonomic organization of the landscape domain in Seri. The classificatory substance terms, discussed in Chapter 7, comprise four terms referring to material substances that head complex landscape terms. They are presented in (306).

(306) Classificatory substance terms:
(a) *hant* ‘earth’
(b) *hast* ‘stone’
(c) *hax* ‘freshwater’
(d) *xepe* ‘sea water’

My prediction was that landscape terms could be grouped based on which classificatory substance term headed a given expression. This prediction was based on the assumption that the classificatory substance term in the complex landscape term refers to the substance that the landscape object is comprised of (i.e., freshwater, sea water, stone or land). This type of relation is shown in example (307), where the classificatory substance term indicates the substance that the landscape object is made of.⁶⁴

⁶⁴ This proves problematic for the initial discussion of this construction, in that it is supposed that this construction is for predications of kinds and not of substances. It seems that this construction can be used for both types of predications. This also brings up the larger issue as to whether hyponymy can be said to exist in Seri in the same lexical semantic property as it does in English.

(307) *Hax c-actim quij tiix hax iha.*
 freshwater SBJ.NMLZ-cut DEF.ART.SG.sit DEM freshwater DECL
 ‘A lake (lit. freshwater that is cut), that is freshwater.’
 (OPT LandscapeLexicalRelations 07)

However, this prediction was not borne out. One of the reasons that the prediction does not hold is that the classificatory substance term does not always indicate the substance that the landscape object is comprised of. For instance, the classificatory substance terms that head the landscape terms in (308) and (309) cannot be used as part of the response to the taxonomic relation question targeting the landscape terms in question.

(308) ?*Hant c-noohcö taax hant iha.*
 land SBJ.NMLZ-concave DEM land DECL
 Intended: ‘The depression in the land (lit. land that is concave), that is land.’
 (AIM LandscapeLexicalRelaitons)

(309) ?*Hast iizx tiix hast iha.*
 stone OBL.NMLZ.tear DEM stone DECL
 Intended: ‘The drainage or rock fissure (lit. stone where it is torn), that is stone.’
 (AIM LandscapeLexicalRelaitons)

In elicitation, other terms were offered as hypernyms. The hypernym given for *hast iizx* ‘rock fissure’ is the descriptive expression *hast iti cazx* ‘stone that is torn’, as is shown in (310).

(310) *Hast iizx hast i-ti c-azx iha.*
 stone OBL.NMLZ.tear stone 3.POSS-on SBJ.NMLZ-tear DECL
 ‘A rock fissure (lit. stone where it is torn) is stone that is torn.’
 (AIM LandscapeLexicalRelations)

The probable explanation for why the classificatory substance terms do not serve as hypernyms to these landscape terms is that they are lexicalized. Under a compositional interpretation, these terms would be hyponyms to the classificatory substance terms that occur in them. However, this explanation raises the question of why some landscape terms are more lexicalized than others. Another possible explanation is that the concepts

that these terms express are more deeply embedded within the hierarchical structure of the taxonomy. This could have something to do with the properties of the landscape objects that these terms refer to. In particular, these landscape objects could be so small that they are thought of as being a kind or instance of a larger landscape object. At this point, the answer to this question is not clear.

In addition to the complex landscape terms discussed above, many of the simple landscape terms cannot be said to describe entities that consist of any of the substances denoted by the classificatory substance terms. Example (311) illustrates that the term *caail* ‘dry lakebed’ is not *hant* ‘land’, the only suitable candidate of the classificatory landscape terms that *caail* could be considered to be a kind-of.

(311)?*Caail* *quij* *tiix* *hant* *iha*.
 dry.lakebed DEF.ART.SG.sit DEM land DECL
 Intended: ‘The dry lakebed, that is land.’ (AIM LandscapeLexicalRelaitons)

This fits with the discussion of simple landscape terms in Chapter 7. My hypothesis regarding why the entities referred to by simple terms fall outside the semantic domain of the complex landscape term paradigm is that the entities they refer to are difficult to classify with respect to the type of substance they are comprised of. In the case of *caail* ‘dry lakebed’, possible referents are entities or landscape features that used to be lakes, but have since dried up and are now just large areas of land with almost no vegetation whatsoever. These areas fill up with water after storms and become what could be characterized as ephemeral lakes. Consequently, dry lakebeds present a problematic case in terms of the semantics of the classificatory substance terms, as they sometimes fall under the category of waterbody and sometimes fall under the category of a concave feature in the land.

Some simple landscape terms have one of the classificatory substance terms as a hypernym, as is shown in (312), where the term *xtaasi* ‘estuary’ can be said to be a hyponym of the term *xepe* ‘seawater’.

(312) *Xtaasi quiij tiix xepe ha.*
 estuary DEF.ART.SG.sit DEM seawater DECL
 ‘The estuary, that is seawater.’ (OPT LandscapeLexicalRelations 07)

Technically, the type of seawater that exists in the estuaries found in the Seri territory is rather different from the kind of seawater found in the Sea of Cortez itself. The water found in the estuaries of this area has a very high saline content. However, due to the fact that the estuaries are connected with the sea, it can be seen why they might be considered to be made up of the same substance. Additionally, there might be a kind of partonymic extension between the sea and the estuary due to the fact that estuaries are connected to the sea.

Further, during elicitation of lexical relations in the landscape domain, I discovered that only places on land, but not places in the sea, get referred to using landscape terms. In order to refer to places where one can fish in the sea, it is actually the land on the seafloor that is being categorized, not a region of the sea. This is reflected by the noun phrase in (313), which is used to refer to a fishing spot in the ocean⁶⁵ – the expression is headed by *hant* ‘land’. This fact is further illustrated in (314), with a similar expression to that in (313), but with *xepe* ‘seawater’ as the head. This expression with *xepe* is infelicitous.

(313) *hant i-ti i-c-aahtim*
 land 3.POSS-on 3.POSS-UNSPEC.SBJ-fish.IMPERF
 ‘fishing spot (lit. land on which one fishes)’ (OPT LandscapeElicitation 05)

⁶⁵ Note that this expression is used to refer to fishing spots in general, not to a particular fishing spot.

(314) *?xepe i-ti icaahitim*
 seawater 3.POSS-on 3.POSS-UNSPEC.SBJ-fish.IMPERF
 Intended: ‘fishing spot (lit. seawater on which one fishes)’

Given that not all landscape terms are subordinate to one of the four classificatory substance terms, what then does the taxonomic structure of the landscape domain in Seri look like? As mentioned above, most landscape objects can be said to be made up of the substances referred to by the classificatory substance terms. At what is the highest taxonomic rank conceptually within the landscape domain (at least from a Western perspective), there does not seem to be a generic term meaning ‘landscape’ or ‘geographic object’ in Seri. This follows from the fact that some of the landscape terms in Seri are hyponyms of different classificatory substance terms and that within one taxonomy no term should have more than one immediate hypernym. Perhaps it is the case that taxonomic relations are not the most important type of relations within the domain of landscape concepts.

The next level or levels in the taxonomy, below that of what would be the highest node, consist of the levels above that of general landscape terms. Hypernyms that occur at these levels are themselves not necessarily landscape terms. Such hypernyms include the classificatory substance terms as well as some complex nominal expressions. The former is illustrated with the examples in (315), (316) and (317). More specifically, the landscape terms in the three examples below can all be said to be hyponyms of *hax* ‘freshwater’, regardless of the classificatory substance term that heads the complex landscape term.

(315) *Hax qu-imej tintica tiix hax iha.*
 freshwater SBJ.NMLZ-flow DEM.MED.go DEM freshwater DECL
 ‘The river (lit. freshwater that flows), that is freshwater.’
 (OPT LandscapeLexicalRelations 07)

(316) *Hax hant c-aahca hac taax hax iha.*
 freshwater land SBJ.NMLZ-be.LOC DEF.ART.SG.LOC DEM freshwater DECL
 ‘The waterhole (lit. freshwater that is located on land), that is freshwater.’
 (OPT LandscapeLexicalRelations 07)

(317) *Hant i-pot hax hac taax hax iha.*
 land 3.POSS-bottom freshwater DEF.ART.SG.LOC DEM freshwater DECL
 ‘The well (lit. freshwater that is at the bottom of land), that is freshwater.’
 (OPT LandscapeLexicalRelations 07)

Taxonomic relations involving two levels of depth within the landscape taxonomy are illustrated in (318) and (319). In this case the lowest taxon is *haxoj* ‘shore’, which is described as being *hant cöcootij* ‘dry land’, and at the next level up, *hant cöcootij* is described as being *hant* ‘land’. The expression *hant cöcootij* ‘dry land’ seems to be a landscape term at a very general level, as an alternative translation for this expression is *terra firma*, the referent of which seems to stand in opposition to the sea.

(318) *Haxoj com tiix hant cö-c-ootij iha.*
 shore DEF.ART.SG.lie DEM land OBL-SBJ.NMLZ-dry DECL
 ‘The shore, that is dry land.’ (AIM LandscapeLexicalRelations)

(319) *Hant cö-c-ootij com tiix hant iha.*
 land OBL-SBJ.NMLZ-dry DEF.ART.SG.lie DEM land DECL
 ‘Dry land, that is land.’ (AIM LandscapeLexicalRelations)

The structure of the part of the taxonomy involving multiple levels of depth is provided in Figure 5 below.



Figure 5. Example of multiple levels of depth within landscape taxonomy

A similar example is shown by the pair in (320) and (321) where *hax cactim* ‘lake’ is described as being *hax hant caap* ‘freshwater that is on the ground’ and *hax hant caap* is described as being *hax* ‘freshwater’. *Hax hant caap*, like *hant cöcootij*, seems to be a very general upper-level term in the Seri landscape taxonomy.

(320) *Hax c-actim quij tiix hax hant*
 freshwater SBJ.NMLZ-cut DEF.ART.SG.sit DEM freshwater land
c-aap iha.
 SBJ.NMLZ-stand DECL
 ‘A lake (lit. freshwater that is cut), that is freshwater that is on the ground.’
 (AIM LandscapeLexicalRelations)

(321) *Hax hant c-aap cap tiix hax iha.*
 freshwater land SBJ.NMLZ-stand DEF.ART.SG.stand DEM freshwater DECL
 ‘Freshwater that is on the ground (waterhole), that is freshwater.’
 (AIM LandscapeLexicalRelations)

As mentioned above, *hax hant caap* seems to be a very general landscape term used to refer to standing bodies of freshwater that exist in the Seri territory, for instance ephemeral lakes and other areas where water collect after rain events. This term contains a nominalized form of the posture verb *-aap* ‘stand’, which limits its reference to landscape objects that have still or non-moving freshwater. One point worth mentioning

is that there are no permanent freshwater lakes in the Seri territory. As already mentioned, sometimes dry lakebeds will retain water after storms, but there are no permanent bodies of freshwater.

Even though there are no permanent bodies of freshwater in the Seri territory, there is a term that can be used to refer to lagoons or lakes, namely, *hax cactim* ‘lake’. There are saltwater lagoons in the Seri territory and these landscape objects can be referred to with the term *xepe cactim* ‘saltwater lagoon’ (lit. ‘seawater that is cut’) or *hax cactim caccat* ‘saltwater lagoon’ (lit. ‘freshwater that is cut that is salty’. The landscape term *hax cactim caccat* ‘saltwater lagoon’ is a hyponym of the classificatory substance term *xepe* ‘seawater’, as is illustrated in (322).

(322) *Hax c-actim c-accat quij tiix xepe ha.*
 freshwater SBJ.NMLZ-cut SBJ.NMLZ-salty DEF.ART.SG.sit DEM seawater DECL
 ‘The saltwater lagoon (lit. freshwater that is cut that is salty), that is seawater.’
 (AIM LandscapeLexicalRelations)

Saltwater lagoons are somewhat more common in the Seri territory than freshwater ones, as saltwater lagoons can be created on the shore as a result of changes in the tide. When the tide goes from high to low, small lagoons or salty water can be left behind, separating them from the sea. These small seawater lagoons or tributaries can be referred to by the simple landscape term *xtaasi* ‘estuary’ as well.

One way in which lexicalization in the landscape domain is particularly different in Seri from landscape lexicalization in languages like English or other Indo-European languages is that Seri does not have a generic term for ‘island’. There are different terms for different kinds of islands, but there does not seem to be a general term. In order to illustrate the contrast between the different kinds of islands, I asked speakers about the various islands found around the Seri territory, specifically, I asked them what kind of

island each one is. One type of island is referred to with the complex landscape term *hant xepe imac quij*, which literally means ‘land that sits in the middle of the sea’. Examples of this type of island include *Tahejöc* ‘Tiburón Island’ (see (323)), *Tosni iti Ihiiquit* ‘Rasa Island’ (see (324)), *Soosni* ‘Alcatraz Island’ (see (325)) and *Hast Ottipa* ‘Patos Island’ (see (326)).

(323) *Tahejöc* *quij* *hant xepe* *i-mac* *qu-ij* *iha.*
 Tiburón.Island DEF.ART.SG.sit land seawater 3.POSS-middle SBJ.NMLZ-sit DECL
 ‘Tiburón Island is an island (lit. land that sits in the middle of the sea).’
 (OPT LandscapeLexicalRelations 07)

(324) *Tosni* *i-ti* *Ihiiquit* *quij* *hant*
 pelican 3.POSS-on OBL.NMLZ.3.POSS.be.mother.of DEF.ART.SG.sit land
xepe *i-mac* *qu-ij* *iha.*
 seawater 3.POSS-middle SBJ.NMLZ-sit DECL
 ‘Rasa Island (lit. where the pelicans have their young) is an island (lit. land that sits in the middle of the sea).’ (OPT LandscapeLexicalRelations 07)

(325) *Soosni* *cop* *hant xepe* *i-mac* *qu-ij* *iha.*
 Alcatraz.Island DEF.ART.SG.stand land seawater 3.POSS-middle SBJ.NMLZ-sit DECL
 ‘Alcatraz Island is an island (lit. land that sits in the middle of the sea).’
 (OPT LandscapeLexicalRelations 07)

(326) *Hast* *Otiipa* *cop* *hant xepe* *i-mac* *qu-ij* *iha.*
 stone Otiipa DEF.ART.SG.stand land seawater 3.POSS-middle SBJ.NMLZ-sit DECL
 ‘Patos Island is an island (lit. land that sits in the middle of the sea).’
 (OPT LandscapeLexicalRelations 07)

A different type of island is labeled with the complex landscape term *hast xepe imac quij*, which literally means ‘stone that is sitting in the middle of the seawater’. This is similar to the island term discussed above, *hant xepe imac quij*, except for the classificatory substance term that heads the expression. *Cofteecöl* ‘San Esteban Island’ is an example of this type of island, as is illustrated in (327).

(327) *Cofteecöl* *quij* *hast* *xepe* *i-mac*
 San.Esteban.Island DEF.ART.SG.sit stone seawater 3.POSS-middle
qu-ij *iha.*
 SBJ.NMLZ-sit DECL
 ‘San Esteban Island is an island (lit. stone that sits in the middle of the sea)’.
 (OPT LandscapeLexicalRelations 07)

Cofteecöl is particularly rocky and not very big, as compared with *Tahejöc* ‘Tiburón Island’. This seems to be the main reason why *Cofteecöl* is best described as *hast xepe imac quij*. This island used to be inhabited by a band of the Seri people (Bowen 2000b), but at present is uninhabited. Many non-Seri people have characterized this island as inhospitable and the seas surrounding it as difficult to navigate (e.g., Bowen 2000a: 455; Felger and Moser 1985: 98; Nabhan 2003).

A third type of island is labeled by the complex landscape term *hast xepe imac coom*, which literally means ‘stone that lies in the middle of the seawater’. Examples of this type of island are *Xazl Iimt* ‘Ángel de la Guarda Island’ (see (328)) and *Coof Coopol It Ihoom* ‘San Lorenzo Island’ (see (329)).

(328) *Xazl Iimt* *com* *hast* *xepe* *i-mac*
 Ángel.de.la.Guarda.Island DEF.ART.SG.lie stone seawater 3.POSS-middle
c-oom *iha.*
 SBJ.NMLZ-lie DECL
 ‘Ángel de la Guarda Island (lit. dwellings of pumas) is an island (lit. stone that lies in the middle of the sea).’ (OPT LandscapeLexicalRelations 07)

(329) *Coof* *C-oopol* *I-t* *Ihoom* *com*
 northern.chuckwalla SBJ.NMLZ-black 3.POSS-on OBL.NMLZ.lie DEF.ART.SG.lie
hast *xepe* *i-mac* *c-oom* *iha.*
 stone seawater 3.POSS-middle SBJ.NMLZ-lie DECL
 ‘San Lorenzo Island (lit. where there are northern chuckwallas) is an island (lit. stone that lies in the middle of the sea).’ (OPT LandscapeLexicalRelations 07)

It is also possible to say that *Coof Coopol It Ihoom* ‘San Lorenzo Island’ instantiates a type of island labeled by the complex landscape term *hant xepe imac coom*, which literally means ‘land that is lying in the middle of the seawater’. An example of this is

another term used to refer to the parts of the Seri territory excluding the villages. This expression is provided in (333). The native speaker went on further to indicate that the whole desert that surrounds the villages is part of the Seri territory that does not include the villages, as is illustrated in (334).

(333) *comcaac coi hant i-yat*
 Seri.people DEF.ART.PL land 3.POSS-point
 ‘Seri territory excluding the villages’ (lit. Seri people land’s point)

(334) *Comcaac coi hant i-yat com hehe an*
 Seri.people DEF.ART.PL land 3.POSS-point DEF.ART.SG.lie wood 3.POSS.area
hipintica t-cooo ma, comcaac coi hant i-yat
 DEM.PROX.go REAL.DEF-all DS Seri.people DEF.ART.PL land 3.POSS-point
iha.
 DECL
 ‘The part of the Seri territory where the Seri don’t live, the whole desert is [the part of] the Seri territory where the Seri don’t live.’ (AIM LandscapeLexicalRelations)

In general, the taxonomic structure of the landscape domain in Seri is flat. That is to say, there are not many levels of different contrast sets that indicate inclusion in a particular group. It appears to be the case that the landscape domain, in terms of inclusion relations, is heavily populated by various hyponyms at a general level that contains most of the landscape terms. Some of those landscape terms at the general level are included in the category sets that are headed by one of the four classificatory substance terms, while others are direct hyponyms of categories that have a more general meaning than the landscape terms that are their hypernyms. There is no term for a unique beginner in the landscape taxonomy in Seri. The resulting picture of the taxonomy is one that is wide, but not very deep.

8.3 Theoretical discussion

Why is it that the taxonomy of the landscape domain in Seri is flat? Is there something about the landscape and landscape objects in general that does not promote inclusion relations within the domain? Smith and Mark (2001: 596) indicate that one of the characteristics of the geographical domain that makes it different from other domains is that landscape objects are typically parts of the Earth's surface and as such, they inherit properties from the Earth.

One of the points that Smith and Mark (2003) make is that mountains are not prototypical objects, especially as compared with the types of objects that have commonly been studied in cognitive science – natural kinds and artifacts. Mountains do not have clear boundaries, they are very large in size and they are not products of natural selection. I would argue that the same thing could be said of many landscape objects, not just mountains. Could it be that landscape objects are all different enough from each other that categorization based on perceptual cues would not link similar objects together? This does not seem to be the case with respect to landscape terms in Seri. In fact, what we see is that high level categories of the landscape taxonomy are based on material or substance. How similar is this to what Berlin (1992) describes for regularities in plant and animal classification?

Without having an idea of how landscape taxonomies in other languages look, it is difficult to make any statements regarding how regular or not the structure of the Seri landscape taxonomy is. In order to understand landscape categorization, more work needs to be done in this area. However, for now, some preliminary observations and tentative explanations can be provided. David Mark (p.c.) believes that landscape taxonomies are

relatively shallow because they are inorganic and largely unstructured by nature, whereas biological domains are structured based on evolutionary properties. In the case of Seri, one possible explanation for why the taxonymy of Seri landscape terms is relatively shallow is that many of the landscape terms have a classificatory substance term as their immediate hypernym. This means that they do not have a landscape term as their direct immediate hypernym. This might be related to the fact that many, but not all, of the landscape terms in Seri are complex and partly compositional. Many of the complex terms might be hyponyms of their heads, making a deep hierarchy potentially impossible.

9 Meronymy in the landscape domain

When studying a conceptual domain, one of the windows into understanding lexical items in that domain is to look at the semantic relations that exist between these lexical items. In Chapter 8, taxonomic relations in the landscape domain were discussed. In this chapter, instead of looking at kind-of relations, part-whole relations are investigated to provide a clearer picture of how Seri people conceptualize the landscape that they live in. This chapter focuses on meronymy in the Seri landscape domain.

Meronymy is the lexical relation that exists between a term that denotes a part and the term that denotes the corresponding whole (Cruse 1986: 159). The lexical hierarchy whose structure is dominated by the lexical relation of meronymy (the part-whole relation) is a meronymy (Cruse 1986: 180, footnote 1). Just as taxonomic relations are the linguistic representation of taxonomic relations, meronymical relations are the linguistic representation of mereological relations. A prototypical example of a part-whole hierarchy is that of the human body and its parts. The utterance *The parts of a foot include toes* is a meronymic statement that expresses a hierarchical relation between a superordinate term – the holonym *foot* – and a subordinate term – the meronym *toes*. There are certain relationships which, at first blush, may appear to be meronymic, but are in fact different from canonical meronymic relationships. An example of such a relationship is that between *handle* and *door*, where a handle is not a necessary part of a door. Cruse (1986: 162) classifies *handle* as a facultative meronym of *door*. However, there are certainly instances of doors without handles and such doors fall within the set of things that can be classified as doors. Perhaps it is best to categorize such parts as canonical parts. Doors canonically have handles. Handles are canonical parts of doors

because they serve an important function of doors, namely, to facilitate their opening and closing. Although my focus in this section is not to capture the specific type of meronymic relation that exists between part and whole terms, it is important to keep in mind that there are different types of meronyms.

Recent work by a group of researchers at the Max Planck Institute for Psycholinguistics has investigated the linguistic categorization of the human body (see Enfield, Majid and van Staden 2006 and the articles contained in that special issue). This work has shown that something as basic and, at least physically, universal as the human body is categorized and conceptualized in different ways across languages and even, to some extent, across speakers of the same language. If humans segment and categorize body parts in different ways, then what should we expect of the way that humans segment parts of the Earth's surface?

One study has shown that body part categories serve a role in landscape categorization. Burenhult (2008) presents data from Jahai, a language of the Aslian branch of the Mon-Khmer language family spoken in Malaysia, illustrating that the (human) body serves as a metaphorical template that landscape entities are mapped onto. Jahai speakers use body part metaphors for parts of landscape entities. For instance, in the subdomain of hydrological features, certain features are compared to parts of the head, such as *mit tɔm* 'river source', literally 'water eye', which "refers to a point where surface run-off first assembles to form a trickle, or where spring water emerges from the ground; *mɔh tɔm*, literally 'waternose', is a point where such trickles join to form a larger rivulet; *ʔntɛŋ tɔm*, literally 'waterear', refers to a peripheral source in the water's head" (Burenhult 2008: 187).

One factor that makes the study of meronymical relations in the landscape domain particularly interesting are the ontological properties of landscape entities. Land- and water forms are not prototypical objects. They do not have clear boundaries. They are significantly larger than most artifacts and life forms. It has been suggested that landscape objects are features or parts of the Earth's surface as opposed to being independent entities (e.g., Smith and Mark 1998: 309; Burenhult and Levinson 2008: 136; Mark p.c.). Topographic features such as hills, mountains, valleys and lake beds could be described as convex or concave parts of the Earth's surface – parts that are perceived based on differences in elevation. The properties of the Earth's surface seem to be salient features of the Earth's surface that are most readily available through visual perception of the existing landscape. Since all humans inhabit some part of the Earth's surface and move around in, see and experience the landscape, albeit a landscape which varies from place to place, everyone presumably categorizes the landscape conceptually and linguistically. Hence, the question arises how different groups of people divide the Earth's surface into parts. Do Seri speakers think of the landscape they inhabit as independent entities or as parts of the Earth's surface? The following discussion addresses some of these issues in the case of the Seri landscape domain.

9.1 Collecting Seri data on meronymical relations

This section discusses methods regarding the way data on meronymical relations was collected in the field. Elicitation began by developing a way to ask what parts a particular item has. As with the elicitation of taxonomic relations, which is discussed in Chapter 8, I began by developing an elicitation frame that would be suitable for the elicitation of meronymical relations. To convey that I was interested in the domain of meronymy, I

started eliciting meronyms of the human body. This domain provides an example of part-whole relations that everyone can relate to. Everyone has a body, and although body part categorization differs for speakers of different languages (Enfield, Majid and van Staden 2006: 145), people appear to universally segment and name parts of the body.

Consequently, beginning with the domain of the body for part-whole elicitation seems natural. An example of the question used to elicit parts is provided in (335).

- (335) *ȷ Yeen hac áz haxehe-ya i-iqui*
 3.POSS.face DEF.ART.SG.LOC what-INTERR 3.POSS-toward
cö-t-paii?
 OBL-INTERR-PASS.make
 ‘What parts does its [a person’s] face have?’ (AIM LandscapeLexicalRelations)

A response to the question posed in (335) is provided in (336). The construction in (336) was offered as the way to convey a part-whole relationship. It contains the irregular verb *-aa* ‘be’ a subject nominalization. Although there is no lexical item that corresponds with the English term ‘part’, I use the translation ‘part of’ for this construction.

- (336) *Hi-ij quij tiix ih-yeen hac zo*
 1.POSS-nose DEF.ART.SG.sit DEM 1.POSS-face DEF.ART.SG.LOC INDEF.ART
haa ha.
 SBJ.NMLZ.be DECL
 ‘My nose, this is part of my face.’ (AIM LandscapeLexicalRelations)

Note that a very similar, but slightly different response type was provided by another consultant. This is shown in (337) where the response is nearly identical to that in (336), but there is an additional particle *oo* which has an unclear meaning (Moser and Marlett 2005: 457). It seems that the two constructions do not differ in meaning.

- (337) *Hi-ij quij tiix ih-yeen hac oo*
 1.POSS-nose DEF.ART.SG.sit DEM 1.POSS-face DEF.ART.SG.LOC PART
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘My nose, this is part of my face.’ (OPT LandscapeLexicalRelations 6/28/07)

The construction provided as a response to the question used to elicit parts of entities is an example of what has been called the copular construction in Seri (Marlett ms. 319). The copula is *haa*. This construction in Seri has various uses, but one of them has to do with providing information regarding the consistency of an object if the complement is a substance-denoting term. The structure of copular clauses generally involves a subject that is followed by a complement and then the copula. Note that the occurrence of the indefinite article *zo* before the copular verb *haa* expresses a partitive meaning (Marlett ms. 338).

I continued the elicitation by targeting meronymical relations of animal body part terms. This is illustrated with the sentence in (338), where a body part of the black sea turtle is referred to.

(338) *Moosni i-pocj cop tiix moosni*
 black.sea.turtle 3.POSS-carapace DEF.ART.SG.stand DEM black.sea.turtle
quij zo haa ha.
 DEF.ART.SG.sit INDEF.ART SBJ.NMLZ.be DECL
 ‘The black sea turtle carapace, that is part of the black sea turtle.’
 (AIM LandscapeLexicalRelations)

After working with the body domain, I moved on to that of artifacts. Since the majority of Seri families have cars and parts of cars have names in Seri, I asked what parts cars have. One response I received contained the term *hant imaasij* ‘tire’, illustrated in (339).

(339) *Hant i-maasij quij tiix trooqui quij zo*
 land OBL.NMLZ-roll DEF.ART.SG.sit DEM car DEF.ART.SG.sit INDEF.ART
haa ha.
 SBJ.NMLZ.be DECL
 ‘The tire (lit. with which it rolls on the land), that is part of the car.’
 (AIM LandscapeLexicalRelations)

After eliciting terms that refer to parts of artifacts, I moved on to terms that refer to landscape objects. The discussion that follows stems from elicitation in that domain.

9.2 Landscape meronymy in Seri – the data

Many terms that refer to parts are expressed by relational nouns in Seri, which are obligatorily possessed (see Chapter 4 section 2 for further discussion). For instance, some landscape objects can be said to have an edge, which is expressed by the spatial relational noun *-teel* ‘edge’. The use of a relational noun to refer to a part of a landscape object is illustrated in (340) with *hast cap iyat hac*, literally ‘point of the mountain’, referring to a summit of a mountain. The meronymic relationship between the mountain and the summit is encoded by the adnominal possessive construction combining the relational noun *-yat* ‘point’ with the nominal that describes the possessor, *hast cap* ‘the mountain’. The adnominal possessive construction makes the possessive predication redundant in (340). However, for the sake of consistency, I elicited possessive predications even for meronyms that are inalienable nouns and as such must be adnominally possessed by their holonym in Seri, such as *-yat*.⁶⁶

(340) *Hast cap i-yat hac hast cap*
 stone DEF.ART.SG.stand 3.POSS-point DEF.ART.SG.LOC stone DEF.ART.SG.stand
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘The summit of the mountain (lit. point of the stone) is part of the mountain.’ (AIM LandscapeLexicalRelations)

The issue of redundancy in the elicitation of meronyms brings up an important issue regarding the compositionality of meronyms in Seri. As discussed in Chapter 8, all types of complex landscape terms potentially have lexicalized interpretations, including complex terms involving relational nouns. However, it is important to keep in mind that

⁶⁶ Expressions such as those in (340) are not the most natural expressions for Seri speakers. I was told that it is redundant to say such things since the part-whole relation is encoded in the complex nominal, but that there is nothing wrong with saying statements such as these.

not every meronym of a landscape term is itself a landscape term. Some of the terms elicited under this context are compositional phrases.

To return to the discussion of *hast cop*⁶⁷ ‘mountain’, another of its meronym’s is *hast cop it quih* ‘base of the mountain’, which is shown in (341). It is formed with the relational noun *-t* ‘base’.

- (341) *Hast cop i-t quih hast cop*
 stone DEF.ART.SG.stand 3.POSS-base DEF.ART.SG.UNSPEC stone DEF.ART.SG.stand
oo zo haa ha.
 PART INDEF.ART SBJ.NMLZ.be DECL
 ‘The foot/base of the mountain (lit. base of the stone) is part of the mountain.’ (OPT LandscapeElicitation 07)

The valley-like areas that exist between hills within a mountain range, *hast quih iicot hac* ‘[the place] in between the mountain’, are considered to be part of the mountain range, *hast com*, as is illustrated in (342). The valley of the mountain is referred to by the relational noun *-icot* ‘place between’.

- (342) *Hast quih i-icot hac hast*
 stone DEF.ART.SG.UNSPEC 3.POSS-place.between DEF.ART.SG.LOC stone
com oo zo haa ha.
 DEF.ART.SG.lie PART INDEF.ART SBJ.NMLZ.be DECL
 ‘The valley (lit. place in between the mountain) is part of the mountain range.’
 (OPT LandscapeElicitation 07)

Hast quih iicot hac covers small valleys that exist within a mountain range, but not larger expanses between mountains. This follows from the fact that this term is a meronym of *hast com* ‘mountain range’, but not one of *hast cop* ‘mountain’.

An example of a meronym of *hast cop* ‘mountain’ is the landscape term *zaaj hac* ‘cave’, as is shown in (343). Of course, not all mountains have caves, but if they do, they are considered to be part of the mountain they exist in.

⁶⁷ *Cap* is an allomorph of the definite article *cop*. This reflects the allomorphy of the verb that the definite article is derived from, *-aap/-oop* ‘stand’.

(343) *Zaaj hac hast cop oo zo*
 cave DEF.ART.SG.LOC stone DEF.ART.SG.stand PART INDEF.ART
haa ha.
 SBJ.NMLZ.be DECL
 ‘The cave is part of the mountain.’
 (OPT LandscapeElicitation 07)

In turn, *hast cop* ‘mountain’ is a meronym of the term *hast com* ‘mountain range’, as is illustrated in (344). These two expressions have the same classificatory substance term, but differ in the definite article that they combine with (i.e., *cop* – the definite article derived from *-oop* ‘stand’ – and *com* – the definite article derived from *-oom* ‘lie’). This example also shows that hills or mountains (*hast cop* can be used to refer to landscape objects that could be called either *a hill* or *a mountain* in English) are parts of mountain ranges in Seri.

(344) *Hast cop hast com oo zo*
 stone DEF.ART.SG.stand stone DEF.ART.SG.lie PART INDEF.ART
haa ha.
 SBJ.NMLZ.be DECL
 ‘The mountain is part of the mountain range.’ (OPT LandscapeElicitation 07)

As indicated above, a mountain is considered to potentially have a point or summit, as shown by the fact that *hast cap iyat* is a meronym of *hast cap* in (340). However, it cannot be said that a mountain range, *hast com*, has a point or summit, *hast quih iyat*.⁶⁸ This is shown in (345), where, when I constructed this sentence, was told that that you would not say this sentence. This is likely due to the fact that the mountains individually have summits, but the mountain range itself is comprised of various mountains and, as such, does not have one unique summit as a part.

⁶⁸ Note that *hast quih iyat* and *hast cap iyat* both refer to a summit. The more common expression seems to be *hast quih iyat*.

(345) *Hast quih i-yat hac hast com*
stone DEF.ART.SG.UNSPEC 3.POSS-point DEF.ART.SG.LOC stone DEF.ART.SG.lie
zo haa ha.
INDEF.ART SBJ.NMLZ.be DECL
Intended: ‘The mountain range has a point/summit (lit. stone’s point).’
(AIM LandscapeLexicalRelations)

It is, however, possible to say that a mountain range has summits, as is illustrated in the sentence in example (346), where the plural form of *hast quih iyat* is a meronym of *hast com*.

(346) *Hast quih i-yataj coi hast com*
stone DEF.ART.SG.UNSPEC 3.POSS-point.PL DEF.ART.PL stone DEF.ART.SG.lie
oo zo haa ha.
PART INDEF.ART SBJ.NMLZ.be DECL
‘The summits (lit. stone’s points) are part of the mountain range.’
(OPT LandscapeElicitation 07)

There are some hills or mountains that have flat tops instead of points, which are sometimes referred to as *mesas* in English.⁶⁹ In Seri, a mesa is considered part of the hill, as is illustrated in (347), which identifies *hast iyat pti catazo cop* as a meronym of *hast cop*.

(347) *Hast i-yat pti c-atazo cop*
stone 3.POSS-point each.other SBJ.NMLZ-make.flat DEF.ART.SG.stand
hast cop oo zo haa ha.
stone DEF.ART.SG.stand PART INDEF.ART SBJ.NMLZ.be DECL
‘The mesa (lit. the point that is made flat) of the hill is part of the hill.’ (OPT LandscapeElicitation 07)

Following the discussion above, the landscape term *hast quih iyat* ‘summit’ that appears in the landscape diagram in Figure 6 refers to the summit of the mountain *Hast Yaxaxoj* ‘Cerro Pelon’. It is not the summit of the mountain range. In fact, these are two separate mountains, in other words, each would be referred to generically as *hast cap*

⁶⁹ The definition for *mesa* in the American Heritage Science dictionary (2005) is as follows: “An area of high land with a flat top and two or more steep, clifflike sides. Mesas are larger than buttes and smaller than plateaus, and are common in the southwest United States.”

‘mountain’. The one on the left is *Hast Yaxaxoj* and the one on the right is *Hap Quicotim*. The summit of *Hast Yaxaxoj* is taller in this picture. The diagram also shows that a large boulder, *hast cpoc*, that can be distinguished from far away is considered to be prominent enough to label in the diagram. Additionally, *hast cap hant quitni tintica*, which literally means ‘the mountain that makes contact with the land that moves away’, is used to refer to the ridgeline that descends from the mountain.

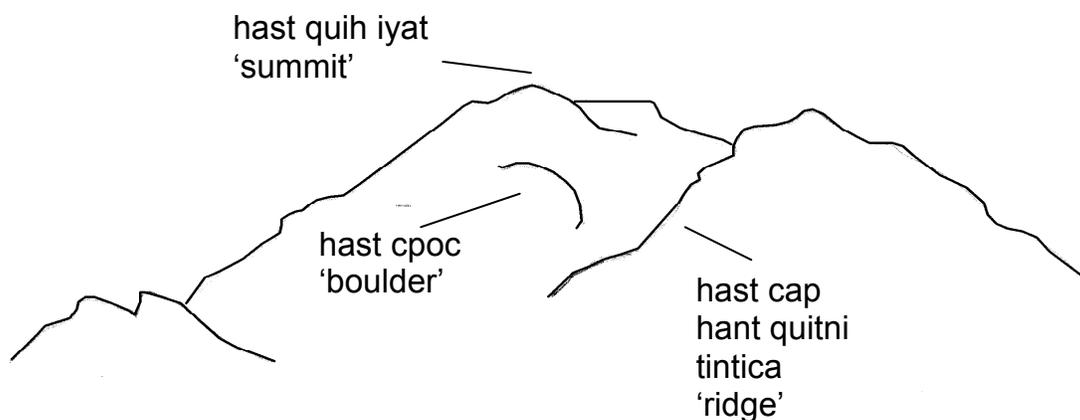


Figure 6. Parts of *Hast Yaxaxoj* ‘Cerro Pelon’ and the area around it.⁷⁰

As discussed in Chapter 2, there are no permanent rivers in the Seri territory. All bodies of freshwater, including rivers and lakes, are ephemeral. These bodies of freshwater fill up or flow after large rain events. The dry riverbeds, commonly called *arroyos* in some parts of the United States, are sites of interest to the Seri people since they contain consumable natural resources (see Chapter 2 for further description). As discussed in Chapter 7, the term used to refer to arroyos in Seri, *hant ipzx*, literally means ‘where the land is chipped’. Given that these landforms change depending upon the

⁷⁰ One aspect of this landscape diagram brings up a difficult question, namely, is a boulder a landscape object? Or is a referent of *hast cpoc* a landscape object for Seri speakers? Trees are not landscape objects, but what is the status of a boulder? At this point, I do not have a good answer for this question. This is an issue that needs more research and may well vary cross-linguistically.

weather, they present an interesting case in terms of meronymic relations. Elicitation with the term used to refer to arroyos, *hant ipzx*, show that it is a holonym of *hant ipzx quih iteel* ‘arroyo’s edge’. This is illustrated in (348).

(348) *Hant i-pzx quih i-teel com*
 land OBL.NMLZ-chipped DEF.ART.SG.UNSPEC 3.POSS-edge DEF.ART.SG.lie
hant i-pzx com oo zo haa ha.
 land OBL.NMLZ-chipped DEF.ART.SG.lie PART INDEF.ART SBJ.NMLZ.be DECL
 ‘The edge of the arroyo (lit. where the land is chipped) is part of the arroyo (lit. where the land is chipped).’ (OPT LandscapeElicitation 07)

Since some arroyos are extensions of mountainside drainages, are they considered to be part of the mountain? In Seri, since arroyos exist on flat ground or *hant ihiipi* they are not considered to be part of a mountain. This is indicated in the constructed utterance that is given in (349). In this case, the native speaker indicated that you could not say this utterance since arroyos do not exist in mountains.

(349) ?*Hant i-pzx tintica hast com*
 land OBL.NMLZ-chipped DEM.MED.go stone DEF.ART.SG.lie
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 Intended: ‘The arroyo (lit. where the land is chipped) is part of the mountain range (lit. lying stone).’ (AIM LandscapeLexicalRelations)

The arroyos in the vicinity of *Haxöl Iihom* ‘El Desemboque del Río San Ignacio’ are drainages carrying run-off from the mountains. These arroyos begin in the mountains and extend onto more level ground. However, there is a different term used to refer to the drainage when it is in the mountain, namely, *hast iizx*, which literally means ‘stone where it is chipped’.

There are multiple saltwater estuaries in the Seri territory, as discussed in Chapter 2. Estuaries have edges, as is indicated in (350), where *xtaasi com iteel tintica* ‘the edge of the estuary’ is a meronym of *xtaasi quij* ‘the estuary’.

(350) *Xtaasi com i-teel tintica xtaasi*
 estuary DEF.ART.SG.lie 3.POSS-edge DEM.MED.go estuary
quij zo haa ha.
 DEF.ART.SG.sit INDEF.ART SBJ.NMLZ.be DECL
 ‘The edge of the estuary is part of the estuary.’ (AIM LandscapeLexicalRelations)

It is significant that even though estuaries are connected to the sea, in that they are filled with seawater, the edge of the estuary is different from the edge of the beach, *xepe quih iteel*, which is literally the edge of the sea. Although the term *xtaasi* ‘estuary’ is a hyponym of the term *xepe* ‘seawater’, as discussed in Chapter 7, based on elicitation, it has become apparent that an estuary and the sea are considered to be separate entities even though they are connected and are both made up of saltwater.

Estuaries have somewhat clear boundaries – the boundary between where there is water and where there is land. However, with estuaries and with the sea, the boundary between land and water fluctuates greatly depending upon the tide. Nevertheless, there are further indications of what constitutes boundaries of an estuary, in particular with the parts referred to in (351) and (352), with *xtaasi quih iteen quij* ‘mouth of the estuary’, which indicates where the estuary begins and *xtaasi quij iti cöihiyat hac* ‘extent/end of the estuary’, which indicates where the estuary ends, both being meronyms of *xtaasi* ‘estuary’.

(351) *Xtaasi quih i-teen quij xtaasi quij*
 estuary DEF.ART.SG.UNSPEC 3.POSS-mouth DEF.ART.SG.sit estuary DEF.ART.SG.sit
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘The mouth of the estuary is part of the estuary.’ (AIM LandscapeLexicalRelations)

(352) *Xtaasi quij i-ti cöihiyat hac*
 estuary DEF.ART.SG.sit 3.POSS-on OBL.NMLZ.reach DEF.ART.SG.LOC
xtaasi quij zo haa ha.
 estuary DEF.ART.SG.sit INDEF.ART SBJ.NMLZ.be DECL
 ‘Where the estuary ends is part of the estuary.’ (AIM LandscapeLexicalRelations)

As for the landscape term used to refer to a beach, *xepe quih iteel*, literally ‘seawater’s edge’, what kinds of parts does it have? The parts of the beach that are furthest away from the sea are dunes, described as *hant quipcö*, literally ‘thick land’. The fact that *hant quipcö* ‘dune’ is a meronym of *xepe quih iteel* ‘beach’ is illustrated in (353).

(353) *Hant qu-ipcö quih xepe quih*
 land SBJ.NMLZ-thick DEF.ART.SG.UNSPEC seawater DEF.ART.SG.UNSPEC
i-teel com zo haa ha.
 3.POSS-edge DEF.ART.SG.lie INDEF.ART SBJ.NMLZ.be DECL
 ‘The dune (lit. land that is thick) is part of the beach (lit. the seawater’s edge).’
 (AIM LandscapeLexicalRelations)

The part of the beach that comes after the dunes, moving in the direction toward the sea is an area defined by the salient presence of small rocks. This area is called *hastoj cnoosc*, literally ‘sharp gravel’. The meronymic relation between the terms *hastoj cnoosc* and *xepe quih iteel* is illustrated in (354).

(354) *Hastoj c-noosc com xepe quih i-teel*
 gravel SBJ.NMLZ-sharp DEF.ART.SG.lie seawater DEF.ART.SG.UNSPEC 3.POSS-edge
com zo haa ha.
 DEF.ART.SG.lie INDEF.ART SBJ.NMLZ.be DECL
 ‘The sharp gravel is part of the beach (lit. the seawater’s edge).’ (AIM
 LandscapeLexicalRelations)

The next area on the beach (from an English perspective) after *hastoj cnoosc* is referred to by the term *hast ancoj*, literally ‘area of rocks’. This area is characterized by an abundance of rocks significantly larger than those found in the *hastoj cnoosc* area. However, *hast ancoj* is not a meronym of *xepe quih iteel* ‘beach’. Instead, it is a meronym of *xepe an com* ‘sea area’, as is illustrated in (355) and (356). The presence of the negative morpheme *m-* in (355) indicates that it is not true that *hast ancoj* is a meronym of *xepe quih iteel com*.

(355) *Hast ancoj com xepe quih i-teel*
stone 3.POSS.area.PL DEF.ART.SG.lie seawater DEF.ART.SG.UNSPEC 3.POSS-edge
com z imhaa ha.
DEF.ART.SG.lie INDEF.ART NEG.SBJ.NMLZ.be DECL
‘The rocky part of the beach (lit. area of rock) is not part of the beach (lit. the seawater’s edge).’ (AIM LandscapeLexicalRelations)

(356) *Hast ancoj com xepe an com*
stone 3.POSS.area.PL DEF.ART.SG.lie seawater 3.POSS.area DEF.ART.SG.lie
zo haa ha.
INDEF.ART SBJ.NMLZ.be DECL
‘The rocky part of the beach (lit. areas of rock) is part of the sea area.’
(AIM LandscapeLexicalRelations)

Some of the parts of the beach discussed above are illustrated in the landscape diagram in Figure 7.

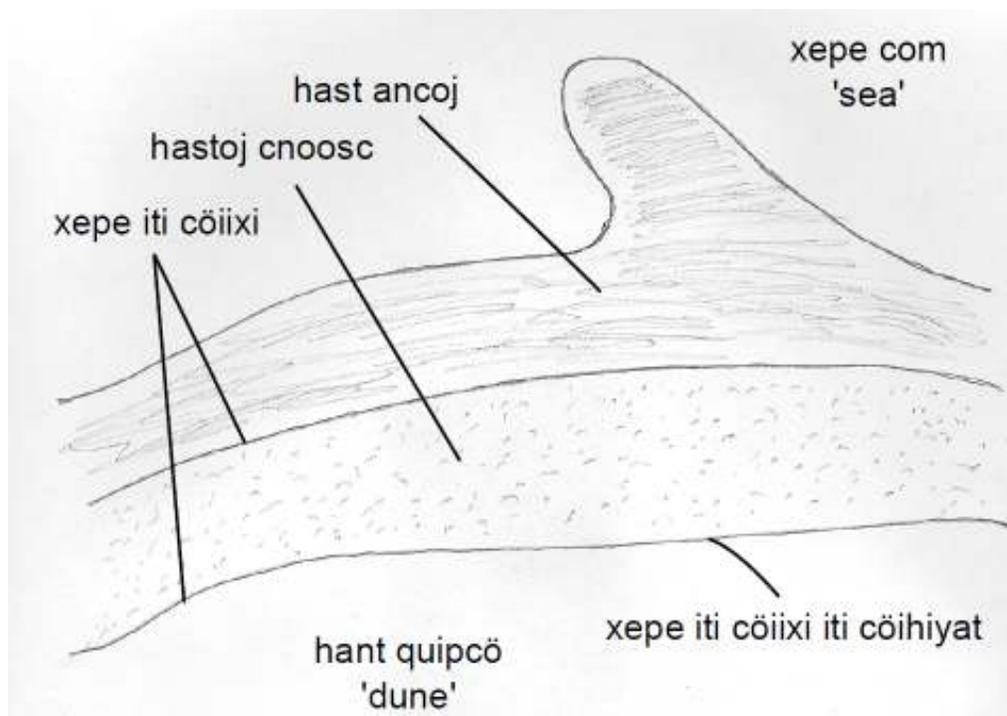


Figure 7. Parts of and areas around *xepe quih iteel* ‘beach’

This diagram is based on an in-situ illustration, as discussed in Chapter 3, drawn with the help of a native speaker consultant. In order to further investigate the parts of the beach

and the sea area, I went to the beach with a native speaker consultant and we created a labeled drawing of the beach and its parts.

The terms *xepe iti cöixi* (lit. ‘on which the sea finished’) and *xepe iti cöixi iti cöihyat* (lit. ‘at the extent of (that) on which the sea finished’) refer to parts of the beach that result from the receding tide leaving behind a mark of its highest point. The term *xepe iti cöixi iti cöihyat* is used to refer to the tide line that is furthest from the sea.

In addition to the parts of the beach discussed above, there is also a term used to refer to the intertidal zone of the beach, *itaaij iizc com*, which literally means ‘shoreline’s face’. This term refers to the area of the beach extending from where the highest tide hits, around the dune area, to where the lowest tide hits. The term *itaaij iizc com* is a meronym of *xepe quih iteel com* ‘the beach’, as is illustrated in (357).

(357) *Itaaij i-izc com xepe quih*
 shoreline 3.POSS-face DEF.ART.SG.lie seawater DEF.ART.SG.UNSPEC
i-teel com zo haa ha.
 3.POSS-edge DEF.ART.SG.lie INDEF.ART SBJ.NMLZ.be DECL
 ‘The intertidal zone (lit. shoreline’s face) is part of the beach (lit. seawater’s edge).’
 (AIM LandscapeLexicalRelations)

Caves provide an interesting case for examining meronymic relations in the Seri landscape domain. As was illustrated in example (343), a cave is considered to be part of a mountain. Caves have their own internal parts as well. For instance, *zaaj cöihiizc quih* ‘wall of the cave’ is a meronym of *zaaj hac* ‘cave’, as is shown in (358).

(358) *Zaaj cöihiizc quih zaaj hac*
 cave OBL.NMLZ.face DEF.ART.SG.UNSPEC cave DEF.ART.SG.LOC
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘The wall of the cave (lit. where the cave has a face) is part of the cave.’
 (AIM LandscapeLexicalRelations)

Similarly, the term *zaaj hahoot hac*, referring to the entrances of caves, is a meronym of *zaaj hac*, as is illustrated in (359).⁷¹

(359) *Zaaj ha-hoot hac zaaj hac*
 cave ABS.POSS-entrance DEF.ART.SG.LOC cave DEF.ART.SG.LOC
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘The entrance to the cave is part of the cave.’ (AIM LandscapeLexicalRelations)

Additionally, the term *zaaj hac an*, which refers to the inside of caves, is a meronym of *zaaj hac*, as is illustrated in (360).

(360) *Zaaj hac an hac zaaj hac*
 cave DEF.ART.SG.LOC 3.POSS.area DEF.ART.SG.LOC cave DEF.ART.SG.LOC
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘The area inside of the cave is part of the cave.’ (AIM LandscapeLexicalRelations)

The term that is used to refer to caves in Seri, *zaaj*, combines with the locative definite article *hac* (see Chapter 6 for further discussion of the definite article system in Seri). This article combines with nouns that refer to spatial regions, among others. Since caves are negative spaces, it seems intuitively plausible that *hac* would combine with the term used to refer caves. However, what does this mean for the meronyms of the term *zaaj* ‘cave’? The terms in (359) and (360) both refer to spatial regions, as they also combine with the locative definite article *hac*. But the term *zaaj cõihiizc quih* ‘the wall of the cave’ in (358) does not refer to a spatial region, but rather, it refers to an object.

Finally, to provide an example from the realm of geographic artifacts, or landscape objects that have been constructed by humans, consider the utterance in (361) that indicates that *hant cnoohcõ* ‘depression in the land’ is part of *hahoo tintica* ‘street’.

⁷¹ Note that these are the same meronyms used to refer to parts of a house.

(361) *Hant c-noohcö hac haaho tintica oo*
 land SBJ.NMLZ-concave DEF.ART.SG.LOC road DEM.MED.go PART
zo haa ha.
 INDEF.ART SBJ.NMLZ.be DECL
 ‘The depression in the land (lit. land that is concave) is part of the street.’
 (OPT LandscapeLexicalRelations 07)

Note also that *hant cnoohcö* is not unique to streets, but rather exist in other contexts.

9.3 Conclusions

Meronyms play a significant role in the Seri landscape domain in that they play a role in one of the types of Seri complex landscape terms, as discussed in Chapter 7.

Classification of the landscape in Seri, as it is expressed with complex landscape terms, is primarily based on the material substance of the landscape entity and, in the case of landscape terms involving meronyms, the shape or geometry of the landscape entity. For example, the term *xtaasi com iteel* ‘estuary’s edge’, as is illustrated in (350), refers to the boundary of the estuary. This meronym, *-teel* ‘edge’, makes reference to the geometry of the object describes a part of. The term *hast cap iyat hac* ‘mountain summit’, as is illustrated in (340), also involves a meronym *-yat* ‘point’, that refers to highest and, generally, pointiest part of the mountain.

Additionally, some of the meronyms discussed in this chapter express the location or place of the part being referred to. For instance, the expression *xtaasi quij iti cöihiyat* ‘extent/end of estuary’, shown in (352), refers to the furthest point the estuary reaches. The meronym *-teen* ‘mouth’ is used to describe the mouth or beginning of the estuary, as is shown in (351). Another instance of a meronym that expresses location information is *-hoot* ‘entrance’ as is used to describe the entrance of a cave in (359).

These data show that meronyms play an important role in landscape categorization in Seri, in that they contribute classificatory information of landscape objects which relate to the shape and location of parts of the Earth's surface that are referred to with landscape terms.

10 Conclusions

This dissertation provides an account of how the Seri people of Sonora, Mexico categorize the landscape that they inhabit through their language. In addition to providing a description of the structural properties of landscape terms in Seri, this work also provides a semantic analysis for the interpretation of complex landscape terms. Further, this thesis presents the first detailed look at the grammar of space in Seri and is the first dissertation focusing on landscape categorization in such detail of an indigenous language, and quite possibly of any language.

This work makes significant contributions to the fields of linguistics, especially within the areas of anthropological linguistics and semantics, as well as geography. The data presented as part of the description of Seri landscape categorization can be utilized in more general ethnophysiological studies that seek to compare cross-cultural/cross-linguistic data (as an example of such a study, see Holton 2009). Similarly, the data presented here on the grammar of spatial reference can be used in comparative studies within semantic typology.

The major findings of this thesis, which contribute to the fields of linguistics and geography, include the following:

- Landscape categorization in Seri is primarily based on the material consistency and properties related to the shape of landscape entities, in particular with four substance terms that classify landscape entities. The properties that narrow the potential referents of the landscape terms are expressed by shape-based determiners, nominalizations and spatial relational nouns.

- This type of categorization is not unique to the landscape domain, but rather can be described as a more general typological property of the Seri nominal lexicon. Nominal expressions are overwhelmingly complex and frequently contain a monomorphemic nominal that has general semantic reference (e.g., *ziix* ‘thing’, *eenim* ‘metal’) in addition to such words as nominalized verb forms or relational nouns.
- There are far fewer simple, monomorphemic landscape terms than there are complex, multi-morphemic ones. This can also be said of the nominal lexicon as a whole – there are far fewer simple, monomorphemic nominals than there are complex, multi-morphemic nominal expressions.
- Seri has determiners that conflate posture semantics and play a significant role in landscape categorization and semantic categorization in other domains. The posture verbs that these determiners are derived from also play an important role in Seri locative descriptions.
- The taxonomy of landscape terms is relatively shallow. In other words, there are not numerous levels of embedding in the landscape taxonomy, but rather, there are numerous landscape concepts at higher levels in the taxonomy.
- Although some body part terms are involved in describing parts of landscape objects, there is no productive domain mapping that licenses metaphors between the body or any other domains and landscape objects, as has been reported for other languages (e.g., Burenhult 2008).
- The results from the study of Seri landscape taxonomy show that terms that might be at what the ‘basic level’ of the landscape taxonomy are complex

terms. In other words, the terms that are most frequently used to refer to general landscape objects are morphologically complex, which seems to go against what has been proposed for words that express basic level categories in other domains (Berlin, Breedlove and Raven 1974: 27). What does this mean for the landscape domain – is there a basic level at all?

- In addition to the findings mentioned above, new contributions to the methodology of ethnophysiology have been explored as part of this study, including the use of situated route descriptions and landscape diagramming.

The methods that were used to collect data on landscape categorization for this thesis were developed in advance of the study and as the study progressed. Since there are not many existing studies in ethnophysiology, new methods are still in development, however see Mark *et al.* (in press) for some of the methods that are being used in some current studies in ethnophysiology, some of which I used. The methods used in this study are not unique on their own, but rather, they are unique in their application to collect landscape-related data. Such methods include in-situ route descriptions and landscape diagramming (see Chapter 3 for further detail on these methods). These methods allowed me to collect data regarding the use of landscape terms in natural discourse and also allowed me to discover parts of landscape objects as depicted firsthand by native speakers. As compared with methods used by some other researchers in ethnophysiology (e.g., Mark *et al.* 2003b, in press), I did not use photographs as a way to elicit landscape terms, as they present many unknowns regarding what the speaker is referring to when describing a photograph, as is discussed in Chapter 3.

While this thesis has provided answers to many questions regarding Seri landscape classification and spatial reference, the work presented here raises even more questions that are yet to be answered. For example, the Seri people were semi-nomadic hunter-gatherers up until fairly recently. With such a mode of subsistence, it seems likely that the Seri had quite a bit of contact with the land that they inhabited and used for resources and that it would be of some use to communicate the locations of natural resources, especially freshwater, to other Seri people. Such communication would require specific terminology in order to provide accurate route descriptions. However, how different is the inventory of Seri landscape terms from that of an agricultural group, especially a group that lives in a geographically similar area, but practices agriculture? In other words, what role does a group's preferred mode of subsistence play in landscape categorization, if any? Looking at other factors, what role does language play in landscape categorization and how do both language and modes of subsistence compete with perception? Until further studies within ethnophysiography are conducted, this question will remain unanswered. In the case of Seri, there is an item worth noting regarding the role of language in landscape categorization, namely, the sparse primary lexicalization in the landscape domain, which seems to have resulted in a compensatory use of complex expressions. This characteristic is not unique to the landscape domain, but is actually pervasive in the Seri nominal lexicon. What role, then, does this lexicalization pattern play in the way that semantic categories get distinguished in Seri the landscape domain? This question I leave open for further research.

As part of my fieldwork in El Desemboque, in collaboration with some of the native speakers I work with, I created a grammar primer for Seri children that contained

pictures drawn by Gabriel Hoeffler Felix, a native speaker of Seri, featuring animals or artifacts on or near specific landscape objects. Below each picture appeared a question in Seri asking where the animal or artifact is located. The primary task of the grammar primer is for Seri children to look at the picture and answer the question below the picture in Seri. At the end of the grammar primer there are also additional exploratory questions in Seri asking children to describe their favorite place to play, where their family members are from and so on. When presenting the workbooks to students in the Seri village, I went to the primary school in El Desemboque to pass out the grammar primer and to go through it with students. I was assisted by the schoolteachers there. One of the observations I made while working with the children in completing the grammar primer was that they had some difficulty in identifying some of the landscape objects in the pictures – not because the pictures were poor, but because they were unsure of the vocabulary. This was surprising to me, especially since the majority of the children in El Desemboque are raised speaking Seri. Although this information was not collected in any planned way, it can be speculated that children are not acquiring as many of the lexical items that are used to refer to landscape objects in Seri as previous generations. If this is true, there could be multiple possible explanations. One simple explanation is that children in elementary school have yet to acquire landscape terms. However, the explanation that seems most likely to me is that the Seri lifestyle is changing. Most families have cars or at least have regular access to cars in order to leave the village or move about the Seri territory. It is far less common nowadays for people to travel by walking. Travel in motorized vehicles allows for a different experience of the surrounding landscape than if one were to travel by foot and also a different way in which

speakers will provide route descriptions to each other. Additionally, with the arrival of constant electricity and televisions in the village, children are more regularly inside watching television in Spanish than they were before. This limits their exposure to the surrounding landscape and provides them with more input in Spanish than existed before television was so common.

Regardless of this shift in lifestyle, Seri is considered to be a fairly vibrant language (Marlett 2006, ms.). As already mentioned, almost all Seri children grow up speaking Seri with somewhat limited exposure to Spanish before school (there is, of course, an exception when one of the parents is not Seri). However, given that children are more regularly exposed to Spanish through television and in school and that their exposure to the landscape on foot is limited, it is quite plausible to suggest that many landscape terms could fall out of use and that a few generations from now, Seri speakers may no longer have as many landscape terms in their lexicon or that they could become more like specialized vocabulary used by men who are deer hunters or women who continue to forage for resources on foot. However, this is pure speculation. Regardless of the future of landscape terms in Seri, this dissertation serves as a synchronic record of landscape terms that were actively being used during the time fieldwork for this dissertation was conducted.

There is still much work that needs to be done in the way of advancing a general understanding of how people delimit the Earth's surface into geographic features and how these concepts get lexicalized cross-linguistically. More studies focusing on landscape categorization need to be undertaken in order for there to be large-scale cross-linguistic comparisons made. In particular, studies on Indo-European languages such as

English, Spanish and German could be undertaken by using college students as subjects (cf. Mark, Smith and Tversky 1999). At this point in time there does not appear to be a comprehensive investigation of landscape categorization that includes a discussion of taxonomic structures and meronymic structures in the landscape domain in any language other than the discussion that is provided in this dissertation. More investigation on the hierarchical properties of semantic relations of landscape terms could enhance our understanding of landscape categorization. Additionally, language documentation projects, which have become much more common in the last 10-15 years, could include components which focus on landscape categorization (for guidelines, see Turk *et al.* in press).

As discussed in this dissertation, complex nominal expressions like those used to describe landscape objects in Seri are not unique to the landscape domain, but rather, are prevalent throughout the Seri nominal lexicon. Although the nominal lexicon in Seri is documented very well in the Seri-Spanish-English dictionary (Moser and Marlett 2005), there is still work to be done to describe the possible structures found in the nominal lexicon and if their interpretation can be accounted for in the same way described in this dissertation for complex landscape terms. Such a task I leave open for future studies.

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