Complex Landscape Terms in Seri

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Abstract: The nominal lexicon of Seri is characterized by a prevalence of analytical descriptive terms. We explore the consequences of this typological trait in the landscape domain. The complex landscape terms of Seri classify geographic entities in terms of their material consistency and spatial properties such as shape, orientation, and merological relations. This analytical system of linguistic categorization opens up an intriguing window into the conceptualization of the landscape domain.

1. Introduction

In this article, we investigate how the Seri people of Sonora, Mexico, categorize the landscape in which they live through their language. The study of landscape classification is the proper domain of ethnophysiography, a new subfield of cognitive anthropology or *ethnosemantics*. Ethnosemantics studies semantic domains, primarily in the natural world, and how they are reflected cross-linguistically. Examples of such studies 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). The overarching question in this line of research is to what extent the linguistic organization of such domains reflects the culture-specific significance and utility of phenomena of the natural world

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and to what extent it reflects universal principles of categorization. Ethnophysiography extends this research to the domain of geographic entities, asking what native terminologies for entities such as hills, mountain ranges, plateaus, valleys, forests, and bodies of water reveal about culture-specific and universal aspects of the conceptualization of these objects.

In the following, we use *landscape term* as a cover term for linguistic expressions whose primary denotation is kinds of land forms or bodies of water.[1] Seri landscape terms fall into two structural categories, complex (or 'analytical') (1) and simple (2):[2]

1)
     a. *hax*   *c-actim*
          fresh.water   SBJ.NMLZ-cut.off
          'lagoon'
     b. *xepe*   *i-teel*
          seawater   3.POSS-edge
          'beach' (lit. 'sea, its edge)
     c. *hast*   *com*
          stone   DEF.ART.SG.LIE
          'mountain range'

2)
     a. *xatj*
          'reef'
     b. *xtaasi*
          'sea lagoon', '*estero*'
     c. *zaaj*
          'cave'

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[1] Mark and Turk (2003) include natural assemblages of vegetation such as forests and steppes among the entities designated by landscape terms. In this first foray into the Seri landscape domain, we restrict ourselves to a narrower scope.
[2] In this paper we follow the orthography of Moser and Marlett (2005). The following abbreviations are used in morpheme glosses: 1 – 1st person; 3 – 3rd person; ART – article; AUX – auxiliary; CAUS – causative; DEF – definite; DIR – directional; EMPH – emphatic; EXIST – existential; FUT – future; INDEF – indefinite; NEG – negative; NEUT – neutral; NMLZ – nominalizer; OBJ – object; OBL – Oblique; PL – plural; POSS – possessive; SAT – satellite; SG – singular; SBJ – subject; UNSPEC – unspecified.

Our primary concern in this article is with the structure and semantics of the complex terms. The first element of these is invariably a member of the following set of four nouns:

3) *hant* 'ground', 'land'
   hast 'stone'
   hax 'fresh water'
   xepe 'seawater'

These four terms do not denote landscape entities in isolation, but rather lexicalize substances. They form complex landscape terms in combination with nominalized intransitive verb forms (1a), relational nouns (1b), and determiners with posture semantics ((1c)). The complex terms have the form of nominals whose lexical heads are the elements in (3). Often, but not always, the same string can be interpreted idiomatically, as a landscape term, and compositionally, as a syntactically complex nominal.

Our database includes the results of field work conducted by O'Meara in collaboration with eight native speakers of Seri in 2005 in the village of El Desemboque del Río San Ignacio. Data collection procedures included verification and further exploration of dictionary entries in Moser and Marlett 2005 and elicitation during expeditions to areas with geographic entities of interest, including foraging trips. At present, our database includes 45 presumed or confirmed landscape terms, of which 33 are analytic and 12 unanalyzable. While the actual numbers of terms in both categories are undoubtedly higher, it is clear that complex terms far outnumber unanalyzable ones.

Our aim in this article is to lay the descriptive groundwork for an in-depth study of the complex landscape terms of Seri. We address the status of these expressions between syntax and the lexicon, the patterns according to which they are formed, and the processes of semantic composition they appear to involve. We begin

with background information on the Seri people, the Seri territory and relevant aspects of the Seri language.

2. The Seri people, their language and their territory

2.1 The Seri people

The Seri people, or as they refer to themselves, *Comcáac*, 'the People', live along the northern coast of the Sea of Cortez in Sonora, Mexico. As of 2000 (Gordon 2005), there were about 800 inhabitants of the Seri territory. They were traditionally semi-nomadic hunter-gatherers. Their primary food resource was the green sea turtle, but other items, such as agave, mesquite beans, cactus fruit, eelgrass, and some terrestrial animals, such as deer and possibly javelina were important to the daily diet (Schindler 1981). The Seri moved around their range land to temporary cites of residence according to availability of natural resources. This type of residential relocation is common among hunter-gatherers (Winterhalder 2001: 21). Hunter-gatherers critically depend on rich knowledge of the ecology and geography of the larger area in which they forage. Consequently, the landscape domain is highly significant in Seri culture.

Following the 1930s, the community changed after it began to enter into the Mexican cash economy and consequently, came to rely upon it. This engendered a change in modes of production. As a result, seasonal migration patterns are no longer observed; the Seri community has adopted a mostly sedentary lifestyle. Presently, the livelihood of the Seri people consists of fishing and the sale of handicrafts. However, a limited amount of gathering is still practiced, specifically gathering that is related to the collection of goods for festivals or the production of handicrafts which are sold to tourists. Sea turtle hunting is now prohibited by the Mexican government, but the

community is allowed to capture a few green sea turtles every year for traditional consumption during Seri festivities.

2.2 The Seri language

The Seri language, or *cmiique iitom* 'Seri language', is a linguistic isolate. It has been suggested that it is part of the putative Hokan stock (Kroeber 1915), which is assumed to include the Pomo languages of California and the Yuman languages of Baja California and the southwestern United States. However, conclusive evidence to support or disprove this relation has yet to materialize (Marlett 2001). There used to be six geographically separate groups of Seri people, which have been referred to as bands (Moser 1963). These six bands spoke three mutually intelligible dialects. However, after the second half of the nineteenth century members of those six bands formed one group, resulting in the loss of dialectal variation (Felger and Moser 1985: 8; Moser 1963).

Seri is, for the most part, head-final. The basic constituent order is SOV.

4) *Cmaam   quih   hax   pac   iyóosi.*
   woman   DEF.ART.SG.UNSPEC   fresh.water   some   drank
   'The woman drank water.' (Moser and Marlett 2005: 856)

In the remainder of this section, we provide background information relevant to the discussion of the structure of the complex landscape terms. Analyzable landscape terms are formed as combinations of one out of four mass nouns with a nominalized intransitive verb, a definite article with posture semantics, or a relational noun.[3] Seri noun phrases are usually followed by a determiner, which can be an article or a demonstrative article (Moser and Marlett 2005: 829). Definite articles are used after proper names and possessed nouns.

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[3] Unanalyzable landscape terms can of course combine with the same dependents that occur in complex terms; but these combinations are then exclusively interpreted compositionally.

5) *Luis   quih   sooit   caha.*
   Luis   DEF.ART.SG.UNSPEC   dance.FUT   AUX.ASSERTION
   'Luis is going to dance.' (Moser and Marlett 2005: 841)

Among the many definite articles of Seri (cf. Moser and Marlett 2005: 843) are three

which are derived from nominalized forms of the verbs *quiij* 'sit' (> *quij*), *caap*

'stand' (> *cop, cap*), and *coom* 'lie' (> *com*) (Marlett and Moser 1994). Example (6)

illustrates both *quij* and *cop*:

6) *Cmiique   ctam   quij*   *haaco cop*
   Seri   man   DEF.ART.SG.SIT   house DEF.ART.SG.LIE
   ano   quiij   iha.
   in   EXIST.SG.sit   ASSERTION
   'The Seri man is inside of the house.' (Moser and Marlett 2005: 841)

As illustrated in Table 1, nouns are not restricted to co-occur with only one of the

posture-based definite articles.

	quij def.art.sg.sit	com def.art.sg.lie	cop def.art.sg.stand
hast	'stone'	'mountain range'	'mountain'
zaah	'sun', 'watch'		'day', 'sunlight'
iizaj	'moon'		'month'
hant		'land'	'year'[4]

Table 1. Article variability and selection of noun senses (Marlett and Moser 1994: 103)

Different senses of the lexical head, the noun, are selected or coerced based on which

article is used. Further definite articles derive from motion verbs. There are also

articles which are unspecified for posture or movement. The plural definite article *coi*

is one of these. There are two indefinite articles, *zo* (singular) and *pac* (plural).

There is little noun inflection in Seri. Count nouns can undergo stem modification

and/or take plural suffixes to indicate plurality, but the inflectional process of

pluralization is fairly irregular. Seri nouns fall into two classes based on the type of

possessive marking they take: inalienably possessed nouns, which include body part

terms and kinship terms, and alienably possessed nouns. Inalienably possessed nouns

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[4] Cf. also Kroefges & O'Connor (this issue) for a discussion of the conflation of 'land' and 'year' in Chontal de Oaxaca.

must take a possessor prefix indicating the person and number of the possessor or a prefix that indicates the lack of a possessor. When the possessor is expressed by a nominal, the possessor nominal precedes the possessed nominal.

7) *hi-táaca*
    1.SG.POSS-jaw
    'my jaw'

8) *ha-táaca*
    UNSPEC.POSS-jaw
    '(its) jaw'

9) *i-táaca*
    3.POSS-jaw
    'his/her jaw'

10) *cocázni   i-lít*
    snake   3.POSS-head
    'head of a snake'
    (Moser and Marlett 2005: 833)

Inalienable nouns include relational nouns that designate object parts and spatial regions projected from them (e.g., *himócl* 'place below me' (Moser and Marlett 2005: 834)). One pattern of complex landscape terms involves relational nouns possessed by one of the four classificatory mass nouns; cf. section 6.[5]

Verbs are morphologically quite complex, with many different derivational and inflectional affixes. Property concepts which are lexicalized in adjectives in English are generally expressed by stative verbs in Seri.[6] Many complex landscape terms contain nonfinite verb forms. In compositional noun phrases, such forms follow nominal heads, which they semantically modify.

11) *haaco c-ooxp   cop*
    house SBJ.NMLZ-white   DEF.ART.SG.LIE
    'the white house' (Moser and Marlett 2005: 842)

Syntactically these deverbal forms appear to behave like relative participles in languages such as Turkish or Telugu. We treat these forms as nominalizations here, following Marlett (1981), though noting a need for further research into their syntactic

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[5] Alienable possession is expressed by attributing to the possessum head a nominalized form of the verb *cyaa* 'possess', inflected for the possessor as subject:
 i. *zixcám   ih-yáa*
     fish   1.SG.SBJ-possess
     'my fish' (Moser and Marlett 2005: 831)
[6] There is, however, a small closed class of nominal dependents which express concepts such as quantification and intensification and which might be argued to be true adjectives.

properties (Stephen Marlett, pc). The prefix that derives these deverbal forms reflects the thematic role of the head or the syntactic function the argument corresponding to it has in finite clauses. Examples (11)-(13) illustrate subject nominalizations. Landscape terms usually contain this form; but examples with other forms occur as well.[7] Some combinations of nouns and intransitive verbs are lexicalized. Consider the following example where the word used to refer to a fish in general, *zixcám*, is used in combination with the intransitive verb meaning 'be big', *caacoj*.

12) *zixcám   c-aacoj   com*
    fish   SBJ.NMLZ-big   DEF.ART.SG.LIE
    'the giant sea bass' (lit. 'the fish that is big')
    (Moser and Marlett 2005: 943)

Example (14) shows *zixcám caacoj* in combination with the verb *cöquiin* 'fat and short', suggesting an idiomatic, non-compositional interpretation:[8]

13) *zixcám   c-aacoj   com   hax   cöyiin   oo.*
    fish   SBJ.NMLZ-big   DEF.ART.SG.LIE   very   short.fat   SAT
    'The giant sea bass is short and fat.'
    (Moser and Marlett 2005: 291)

Indeed, *zixcám caacoj* is the Seri name for the giant sea bass (*Stereolepis gigas*). This is an example of the strategy of lexicalizing complex nominals as terms for natural kinds and artifacts which is pervasive in the nominal lexicon Seri. In sections 4-7, we examine the use of this strategy in the landscape domain.

2.3 The Seri territory

The Seri hold claim to a stretch of land along the coast of the Gulf of California in Sonora, Mexico that starts south of Puerto Libertad and ends just north of Kino Bay, including around 100km of coastline. They refer to their territory as *comcáac quih hant iti yaii* which literally translates to 'place where the Seri people live'. The

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[7] E.g., *hant iipzx* 'arroyo', lit. 'land (where it is) chipped', is formed with an oblique nominalization; cf. (26) and (39) below.
[8] The giant sea bass can measure up to seven feet in length; so it is likely that the particular specimen referred to in (13) was short for a giant sea bass, but not for a (big) fish in general.

territory is approximately 211,000 ha in size, including the largest island in the Gulf of California, *Isla de Tiburón*. There are two villages within the territory where most of the community members permanently reside, namely, *Socáaix* (Punta Chueca) and *Haxöl Iihom*, lit. 'where there are clams' (El Desemboque del Río San Ignacio). See the map in Figure 1 for the locations of the villages.

-- INSERT FIGURE 1 ABOUT HERE --

The Seri territory is located in a very arid environment. The average rainfall is between 100-250mm per year (Hastings and Humphrey 1969). The amount of annual rainfall is unpredictable and varies from year to year. Rains occur mostly during two parts of the year: summer (with monsoon-like storms) and winter-spring (more steady rain accompanied by cooler temperatures). The summers are brutally hot and can be somewhat humid. Between June and September temperatures are commonly over 38°C (100°F) and are sometimes over 43°C (109°F) at the peak of the summer.

The Seri territory is found within the Sonoran Desert vegetational region (Shreve 1951). This corresponds with the arid climate and low levels of soil moisture found in the area. Both the topography and vegetation are complex and vary accordingly. There are no perennial rivers or streams in the area that flow into the sea. However, there are diverse intertidal habitats along the coast. These areas have higher levels of soil moisture and allow for different types of vegetation. There are rocky desert mountains which run the same direction as the coastline, a few kilometers inland along with coastal plains, and there is also a tombolo[9] which connects an island to the mainland at Sargento Bay. There are *playas* (dry lakebeds) along with coastal lagoons and inlets (*esteros*). The esteros support mangroves and are filled and drained

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[9] A tombolo is a spit which connects an offshore island to the mainland (The Geography Portal; http://www.kesgrave.suffolk.sch.uk/learningzone/subjects/geography/).

with the tides, creating high salt concentration in the water. There are also various types of dunes, islands, bays, and coves that can be found along the coast. The ecological and geographic diversity of the Seri territory, and in particular the arid-coastal climate, in combination with the traditional modes of production make for a particularly interesting case study in ethnophysiography.

3. The classificatory substance terms

This paper focuses on the complex landscape terms of Seri. Complex landscape terms are comprised of one of the four substance terms *hast* 'stone', *hax* 'fresh water', *xepe* 'seawater', and *hant* 'ground', 'land', as mentioned above, in combination with a definite article with posture semantics, a nominalized form of an intransitive verb, or a relational noun. In this section, we discuss the denotation of the substance terms.

The four classificatory substance terms, in their most basic semantic representations, and when used in isolation, are mass nouns. As such, their reference is cumulative (Quine 1960; Link 1983) and divisive (ter Meulen 1980): that is, the sums and (macroscopic) parts of possible referents of these terms are likewise possible referents of them.

14) *Hast Yaxáxoj ii-cp   hac   hant   c-paxz*
    Cerro Pelón 3.POSS-next   DEF.ART.SG.LOC   land   SBJ.NMLZ-rough
    quih   qu-ihíiha   ha.
    DEF.ART.SG.UNSPEC SBJ.NMLZ-pure ASSERTION
    'The land near Cerro Pelón is all rough.'
    (Moser and Marlett 2005: 246)

15) *Hax   zo   h-xo-m-áho.*
    water   INDEF.ART.SG 1.SG.SBJ-EMPHATIC-NEG-see
    'I don't have any water.'
    (Moser and Marlett 2005: 495)

Three of the four classificatory terms do not have plural forms. The one that does is *hast* 'stone'. The plural, *hasatoj* 'rocks', coerces an object interpretation. In (17), the

same effect is triggered by the posture-based article *quij* 'sit', which selects for an object-denoting expression:

16) *hast   quij*
     stone   DEF.ART.SG.SIT
     'stone'

In the following sections, we discuss the three patterns according to which the complex landscape terms are formed: by combining one of the four substance terms with a definite article, a nominalized verb form, or a relational noun.

4. Substance term + definite article

Geographic entities can be referred to with a combination of a substance term and one of the definite articles which derive from the posture verbs *sit*, *stand* and *lie* (cf. section 2.2).

17) *hast   com*
     stone   DEF.ART.SG.LIE
     'mountain range'

18) *hast   cop   hant   com   ano   moca ha.*
     stone   DEF.ART.SG.STAND   land   DEF.ART.SG.LIE from result ASSERTION
     'The mountain comes from the earth.'

19) *he   xepe   com   iti   quiij   iha.*
     I   seawater   DEF.ART.SG.LIE   on   EXIST.SG.SIT   ASSERTION
     'I am at sea (when in a boat).'

20) *Zaah   quij   hant   quij   itácl cöcayáxi*
     sun   DEF.ART.SG.STAND   land   DEF.ART.SG.SIT   bigger.than
     ha.
     ASSERTION
     'The sun is bigger than the earth.'
     (Moser and Marlett 2005: 154)

The posture-based articles classify animate beings with respect to the posture they are in and inanimate objects with respect to spatial properties of shape or axial structure, support, and orientation, conceptualized as a kind of "fictive" or metaphorical

posture.[10] The object denotation of the expressions exemplified in (18)-(21) is presumably inherited from the selection restrictions of the positional verbs and the articles derived from them. It is only objects, not substances, which may – metaphorically – sit, stand, or lie. The mass term contributes the substance of the geographic entity, and the combination with the posture-based article coerces the interpretation of an object consisting of the substance. This object interpretation is not necessarily restricted to the relevant landscape entities. An example of this can be found in (21):

21) *hax   cop*
    freshwater   DEF.ART.SG.STAND
    'a quantity of fresh water in a cup or container'

The landscape terms in (18-19) are lexicalized, idiomatic collocations that have the "surface structure" of the corresponding noun phrases, but whose denotation is restricted to a particular kind of land form, body of water, etc., in the mental lexicon. When interpreted compositionally, *hast com* would denote any kind of object which consists of stone and could be said in Seri to be "lying", and *hast cop* would denote any kind of "standing" object of stone. The idiomatic senses 'mountain range' and 'mountain' or 'hill' are special cases of these more general meanings. In actual fact, compositional interpretations of the landscape terms (or rather, the noun phrases on which they are based) are sometimes, but not always, available. *Hast com* is apparently used compositionally in (22):[11]

22) *hast   com   ica   s-ah-jíit   itax,   qu-iim.*
    stone   DEF.ART.SG.LIE   DIR   FUT-CAUS-fall AUX   SBJ.NMLZ-sleep
    'He was asleep while the rock was about to be dropped on him.'
    (Moser and Marlett 2005: 884)

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[10] In analogy to Talmy's (1996) "fictive motion".

[11] This example is taken from a story where some giants take a big long *metate* (grinding stone) and try to drop it on some people.

However, in elicitation, consultants rejected *hast com* in reference to a rock that was placed on a table top in what could be described as a prone position in English. The issue of the compositionality of the complex landscape terms is examined in more detail in section 7.

5 Substance term + nominalized verb

Most of the complex landscape terms in our database are combinations of a substance term and a nominalized verb form that modifies it as a kind of relative participle. These verb forms denote the property of being a participant in the eventuality lexicalized in the verb root. Primarily, stative intransitive verbs appear in landscape terms. Here are some examples:

23) *hant   c-aptxö*
    land   SBJ.NMLZ-punctured
    'mud cave' (hole in the ground underwater where fish live)

24) *hant   c-jip*
    land   SBJ.NMLZ-flat
    'plain'

25) *hant   c-ooxp*
    land   SBJ.NMLZ-white
    'exposed sandbar'

26) *he   hant   ii-pzx   ano   quiij   iha.*
    I   land   OBL.NMLZ-chip   in   EXIST.SG.SIT   ASSERTION
    'I am in the arroyo/gulch.'

27) *hant   qu-ipcö*
    land   SBJ.NMLZ-thick
    'dune'

28) *hax   qu-imej*
    fresh.water   SBJ.NMLZ-flows
    'arroyo', 'river'

29) *hax   c-aacoj*
    fresh.water   SBJ.NMLZ-big
    'lake'

30) *hax*   *c-actim*
fresh.water   SBJ.NMLZ-cut.off
'lagoon'

31) *xepe*   *c-actim*
seawater   SBJ.NMLZ-cut.off
'sea lagoon', 'tidal pool'

Hax cactim (30) and *xepe cactim* (31) refer to the same spatial configuration, but differ in the material consistency of the landscape object. Conversely, *hax cactim* (30) contrasts with *hax caacoj* (29) with respect to size and boundaries, not substance.[12]

Another interesting pair is *hax quimej* (28) and *hant iipzx* (26). The former refers to the body of water that flows in the gulch; the latter to the gulch of a dry arroyo. The gulch area is larger; it is silty and has green vegetation growing in it. The arroyo near El Desemboque, Río San Ignacio, flows only a few times a year, if at all. However, the area around the *hant iipzx* is a favorite place to go to pick fruit from the cardón cactus. Arroyos originate in the mountains or hills. *Hast iizx*, lit. 'stone (where it is) torn', is used to refer to a rock fissure in a mountain or hill, which is a starting point of drainage from which the arroyo extends. Once the arroyo leaves the mountain and reaches level ground, it is referred to as *hant iipzx*.

Semantic composition in the nominals underlying this type of landscape term is presumably broadly similar to the processes involved in the terms formed with posture-based articles, as discussed in the previous section. Again, the mass term denotes the substance of the geographic entity. It type-shifts from substance to object denotation in accordance with the selection restrictions of the nominalized verb. The lexical meaning of the nominalized verb form imposes another condition on possible

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[12] There are no real examples of *hax caacoj* in the Seri territory.

referents: they must literally or metaphorically have the property of being a participant of the relevant kind of the eventuality type lexicalized in the verb root. For instance, possible referents of *hant cjip* (24) must be objects that consist of soil and are flat, and possible referents of *hant cooxp* (25) must consist of soil and are white. Again, the denotation of the landscape term is a lexicalized special case of the compositional meaning of the underlying nominal. As with the terms formed with definite articles, some of the combinations with nominalized verb forms in fact have alternative compositional interpretations, while in other cases compositional interpretations appear to be unavailable and the expression is used exclusively as an idiomatic landscape term.

6 Substance term + relational noun

The final structural type of complex landscape term is the type involving at least one mass term and a relational noun. Relational nouns lexicalize classes of individuals as characterized by a particular conceptual relation to other individuals. As mentioned above, many classes of relational nouns are inalienable in Seri, i.e., require derivation in order to be used without possessor inflection. Of particular relevance for the formation of landscape terms are relational nouns that denote generalized spatial object parts such as tops, bottoms, edges, and interstices in the terms illustrated in (32)-(36). The relational nouns in (32)-(36) are inalienable; they are marked by a prefix that indicates the possessor.

32) *hant*   *i-pot*   *hax*
    land   3.POSS-bottom fresh.water
    'well'

33) *hant*   *quih*   *i-teel*
    land   DEF.ART.SG.UNSPEC   3.POSS-edge
    'coast'

34) *Cocsar*   *heeque zo*   *xepe*   *i-téel*
    non.Indian.Mexican   child   INDEF.ART.SG seawater   3.POSS-edge

com	*cö-t-afp,*	*xepe*	*ano*
DEF.ART.SG.lie	3.OBL-NEUT-arrive.SG	seawater	in
t-aalim	*xah*	*t-amoz,*	*yo-pásjim.*
NEUT-play.SG	and	NEUT-want.SG	DIST-fall.into.the.water.SG

'A non-Indian Mexican child went to the beach to play, and fell into the water.' (Moser and Marlett 2005: 245)

35) *hast   quih   i-yat*
    stone   DEF.ART.SG.UNSPEC   3.POSS-point
    'summit (of a mountain)'

36) *hast   quih   ii-cot*
    stone   DEF.ART.SG.UNSPEC   3.POSS-place.between
    'valley'

As in the case of the landscape terms formed with definite articles and nominalized verbs, the terms formed with relational nouns can be understood as lexicalized versions of compositional nominals. We begin again by analyzing the semantic composition in these nominals. The examples illustrate nominals formed by substance terms, usually, but not necessarily, in combination with a definite article and followed by the relational noun possessed by the nominal. We assume that where the relational noun strategy serves to form new landscape terms, the possessor of the relational noun is not a landscape term in its own right. For example, *hast quih* in (35)-(36) by itself means 'stone', not 'mountain' or 'valley'. Rather, the possessor nominal is a mass term. An object interpretation of these is coerced through the combination with the relational nouns. Since the relational nouns in question denote spatial object parts, they select for possessors with object denotation. The coerced object interpretation of the possessor nominals is that of landscape entities, of which the higher noun phrase denotes the part singled out by the relational noun (e.g., the point, i.e., summit, of a mountain in (35) and the interstice between mountains, i.e., a valley, in (36)). As is the case with the other two types of complex terms, the full semantic extension of the relational noun terms under a compositional interpretation is usually not actually available. Thus, *hast quih iyat* in (35), when interpreted compositionally, applies to

the tip of any object of stone; yet, in actual fact, Seri speakers use the expression exclusively in reference to mountain tops. In other cases, the possible extension under a compositional interpretation, given world knowledge, more or less coincides with the idiomatic interpretation; this is the case, for example, with *xepe itéel* 'edge of the sea' in (34).

7 The complex landscape terms of Seri between syntax and the lexicon

In the preceding sections, we have shown that the complex landscape terms can be analyzed as lexicalizations of compositional nominals. In the present section, we address the question of the semantic and syntactic relations between the landscape terms and the nominals on which they are based.

The structure of the complex nominals combines one of the four mass nouns *hant* 'ground', 'land', *hast* 'stone', *hax* 'fresh water', and *xepe* 'seawater' with a definite article conflating posture semantics, a nominalized verb form, or a relational noun denoting an object part. The second element invariably selects for an object-denoting nominal to combine with – an expression designating a kind of object that (metaphorically) exhibits the posture expressed by the article, a participant in the eventuality expressed by the verb, or the possessor of the object part expressed by the relational noun. This selection restriction requires coercion of an object interpretation of the mass noun. The particular property encoded by the second element further narrows the extension of the complex nominal – a possible referent has to consist of the substance denoted by the mass noun and in addition be in a particular position (metaphorically) expressed by the article, be in a state or participate in an event described by the verb root, or be a part, of the kind specified by the relational noun, of the object characterized by the mass noun under coercion.

With some of the complex landscape terms, the idiomatic and the compositional interpretation coincide. Consider the case of *xepe com*, as in (20), repeated here for convenience:

37) he   xepe   com   iti   quiij   iha.
    I   seawater   DEF.ART.SG.LIE   on   EXIST.SG.SIT   ASSERTION
    'I am at sea (when in a boat).'

Com is the only positional article that combines with *xepe* 'seawater' under an object interpretation. And since *xepe com* under an idiomatic interpretation refers to the sea in general, rather than a specific sea, compositional and idiomatic denotations are coextensive in this case.

In most cases, however, the lexicalized meaning of the landscape term is more specific than the compositional interpretation of the corresponding complex nominal. An example is *hast com*, which as a landscape term refers to mountain ranges, but can also be used in reference to rocks that can be said to be in a lying position:

38) hast   com   ica   s-ah-jíit   itax,   qu-iim.
    stone   DEF.ART.SG.LIE   DIR   FUT-CAUS-fall   AUX   SBJ.NMLZ-sleep
    'He was asleep while the rock was about to be dropped on him.'
    (Moser and Marlett 2005: 884)

Future research will have to determine whether the landscape terms are in fact hyponyms of sorts of the underlying compositional nominals. Are mountain ranges conceptualized simply as gigantic prone rocks in Seri? It may well be so. But it is at least equally conceivable that geographic entities have a special ontological status (Mark, Smith and Tversky 1999; Smith and Mark 2001, Mark and Turk 2003), and lexicalization of the landscape terms is accompanied with a shift in denotation from the object domain to this domain of geographic entities.

Crucially, while compositional interpretations can be constructed for all complex landscape terms, in many cases native speakers in fact reject them. For instance, in spite of (38), consultants proved quite reluctant to accept *hast com* in

reference to rocks placed on a table top in a position that might be described as *lying* in English. There is no question that the idiomatic interpretations are quite salient in the minds of Seri speakers, and they may well preempt use of the corresponding complex noun phrases.

Clearly, the complex landscape terms are represented in the mental lexicon of the Seri speakers. Yet, in more than one sense, they preserve traces of the compositionality of the nominals on which they are based: first, in that the meaning of the landscape terms remains narrowly derived from the compositional interpretation of the underlying nominal; and secondly, in that the schema of semantic composition often remains somewhat active and productive. Consider (39)-(44):

39) *Pajíi   hant   ii-pzx   quih   t-aacoj,*
    Pajíi   land   OBL.NMLZ-chip   DEF.ART.SG.UNSPEC   NON.FUT.DEP-big
    haa   ntiya.
    there   be.with.movement
    'There is a big arroyo near Pajíi.' (Moser and Marlett 2005: 418)

40) *hast   c-aacoj*
    stone   SBJ.NMLZ-big
    'big hill' OR 'big rock'

41) *hast   heeque*
    stone   small
    'little hill' OR 'little rock'

42) *xepe   c-azíim*
    seawater   SBJ.NMLZ-pretty
    'tranquil sea'

43) *xepe   c-ahtáasim*
    seawater   SBJ.NMLZ-foamy
    'foamy sea'

44) *xepe   c-yaail*
    seawater   SBJ.NMLZ-deep
    'deep sea'

Example (39) illustrates a complex landscape term – *hant iipzx* 'arroyo' – modified by the dependent verb form *taacoj* 'be big'. (40)-(44) are examples of an

alternative strategy of modifying complex landscape terms. *Hast caacoj* in (40) means literally 'rock (which is) big', but can also be understood in the sense of *hast cop caacoj 'hill (*hast cop*) (which is) big'.[13] In other words, (40) can be interpreted as a modification of *hast cop* 'hill' by *caacoj* '(that which is) big', except that the definite article *cop* (DEF.ART.SG.STAND), which is normally part of the term for 'hill' or 'mountain', has been omitted. The resulting string is ambiguous between the interpretations 'big rock' and 'big hill'. Similarly *hast heeque* in (41) can mean both 'little rock' and 'little hill'. Examples (42)-(44) show modifications of *xepe com* 'sea', but again with the article *com* (DEF.ART.SG.LIE) omitted. In this case, no ambiguity arises, since idiomatic and compositional interpretations of *xepe com* coincide, as discussed above. Compare (44) to (45):

45) *xepe* *c-yaail*   *com*
  seawater SBJ.NMLZ-deep DEF.ART.SG.LIE
  'the deep sea' (Moser and Marlett 2005: 585)

It may be possible to analyze (44) as derived from (45) by ellipsis, and analogously in (40)-(43). However, the putative ellipsed forms are quite pervasive in Seri. Moreover, notice that the nominalized verb *cyaail* '(that which is) deep' in (45) is inserted into the term *xepe com*. A similar example is (46), which compares to the "abridged" (42) above, except for the use of a different nominalized verb:

46) *xepe* *c-ooxp* *com*
  seawater SBJ.NMLZ- white DEF.ART.SG.LIE
  'the tranquil sea' (Moser and Marlett 2005: 230)

In the absence of further evidence, we propose a more parsimonious analysis according to which expressions such as (40)-(44) involve parallel formations, rather

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[13] *Hast cop caacoj is actually illformed, since nominalized verb forms are not directly compatible with posture-conflating definite articles such as *cop* (Stephen Marlett, pc). This may be further evidence of surviving traces of compositionality in the complex landscape terms. If *hast cop* 'hill' were perfectly lexicalized, its internal structure should be "invisible" to external syntax, and the presence of the article *cop* should have no impact on the combinatorial properties of the complex term as a whole.

than ellipsed versions, of the complex landscape terms. The second element in these expressions triggers coercion of an object interpretation of the mass noun in initial position in the same way the second element in the original landscape terms does. Narrowing of the extension to the particular kind of landscape entity, where it applies (in (40)-(41), but not in (42)-(44)), involves transposition of the schema of semantic composition from the original landscape term. Thus this schema is to some extent productive, and to the extent that expressions such as (40)-(44) are generated on the spot, it continues to be interpreted compositionally.[14]

8 Cultural vs. linguistic factors selecting for the complex landscape term strategy

Due to the preponderance of complex terms in the Seri landscape domain, most land and water forms are linguistically categorized in terms of the material they consist of plus some individuating property: shape and orientation in the case of the terms formed with the posture-based articles; a merological relation to some larger landscape entity in the case of the terms formed with relational nouns; and some other spatial or physical property in the case of the terms that involve nominalized verb forms. This analytical system of linguistic categorization opens up a fascinating window on the conceptualization of the landscape domain as a whole.

The question now arises whether this system of linguistic categorization is indeed the *product* of the conceptualization of geographic entities in Seri culture, or is rather conditioned by some typological design principle of the Seri language. We submit that the second analysis is correct. Complex expressions similar in structure to those found in the landscape domain are in fact pervasive in the Seri nominal lexicon. This trait extends to both natural kind terms and artifact terms. Thus, the giant sea bass

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[14] We suspect that Seri relies on a similar strategy for indefinite uses of the landscape terms that involve definite articles. That is, the definite article is replaced with an indefinite article, but the schema of semantic composition, which depends on the posture meaning of the definite article, is preserved.

(*Stereolepsis gigas*) is categorized as 'fish which is big' (47); the totoaba (*Totoaba macdonaldi*) as 'fish which is long' (48); dodder (*Cuscuta leptantha, Cuscuta corymbosa*) as 'soil's intestine' (49); the desert thorn apple (*Datura discolor*) as 'plant that makes you grimace' (50); a ball as 'thing that bounces' (51); and a table as 'wood on which one eats' (52):

47) *zixcám c-aacoj*   *com*   *hax*   *cöyiin*   *oo*
   fish   SBJ.NMLZ-big   DEF.ART.SG.LIE   very   short.fat   SAT
   'The giant sea bass is short and fat.' (Moser and Marlett 2005: 291)

48) *Zixcám*   *c-acöla*   *quih*   *canóaa*
   fish   SBJ.NMLZ-long   DEF.ART.SG.UNSPEC   boat
   quih   *ha-tapócatoj*   *ha-yóo-mlajc.*
   DEF.ART.SG.UNSPEC   1.PL-fill.PL   1.PL-DISTAL-bring.PL
   'We brought a boat full of totoaba.' (Moser and Marlett 2005: 856)

49) *hamt*   *i-tóozj*
   soil   3.sg.poss-intestine
   'dodder' (Moser and Marlett 2005: 324)

50) *hehe*   *c-amós-tim*
   plant   SBJ.NMLZ-grimace-ITERATIVE
   'desert thorn-apple' (Moser and Marlett 2005: 371)

51) *ziix*   *c-oquéht*
   thing   SBJ.NMLZ-bounce
   'ball'

52) *Icáaspoj*   *com*   *hehe*   *iti*   *i-cóohitim*
   pencil   DEF.ART.SG.LIE   wood   on   3.OBJ-eat.PL
   com   *iti*   *coom*   *iha.*
   DEF.ART.SG.LIE   on   EXIST.LIE.SG   ASSERTION
   'The pencil is on top of the table.' (Moser and Marlett 2005: 900)

Specifically with regard to the ethnobotanical domain, Felger and Moser (1985: 62) indicate that "large, conspicuous, or culturally important plants tended to have unanalyzable names." Nearly 75% of plant names are wholly or partially analyzable. The attributes primarily refer to descriptive characteristics of the plant, cultural use, or physiological effects on humans or animals (Felger and Moser 1985: 66).

Seri has a "model" or "template" for the formation of landscape terms, much like Jahai (Burenhult, this issue) and Yélî Dnye (Levinson, this issue); but this template is not restricted to the landscape domain, but pervades the nominal lexicon of the language. It is thus clear that paucity of monomorphemic lexicalization and compensatory use of complex descriptive terms is a general typological characteristic of the nominal lexicon of Seri. The pervasiveness of complex descriptive landscape terms is a consequence of this design principle. This is not to say, however, that the analytical structure of the complex landscape terms does not have cognitive consequences. Indeed, one may ask whether the productivity of the system of analytical terms, as discussed in the previous section and the dependence of this productivity on covert categories leads Seri speakers to routinely pay greater attention to the material and spatial properties of landscape entities than speakers of languages with a large inventory of monomorphemic landscape terms. Future research will have to clarify this.

9. Summary

Seri uses predominantly complex descriptive nominals in reference to landscape entities. Monomorphemic lexicalization of landscape terms is the exception rather than the norm. The analytical landscape terms combine one of four mass nouns with a definite article with posture semantics, a nominalized verb form, or a relational noun. The mass noun refers to the substance of which the land or water form consists. Every geographic entity referred to by an analytical landscape term is thus classified in terms of whether it consists of seawater (*xepe*), fresh water (*hax*), stone (*hast*), or land (*hant*). The combination with the second element coerces an object interpretation of the mass noun. The second element further specifies the denotation of the complex nominal in terms of spatial properties such as shape and orientation or merological

relations to larger objects. The resulting complex nominal can often be interpreted compositionally, in which case it may refer to any object of the relevant material and spatial properties. Restriction of the denotation to landscape entities of a particular kind is a function of lexicalization of the complex nominal. In many instances the idiomatic meaning of the landscape term appears to preempt compositional interpretations. However the behavior of the analytical terms under modification suggests that their underlying schema of semantic composition often remains active in the minds of Seri speakers.

The predominance of complex descriptive terms in the Seri landscape domain is a consequence of an overarching typological feature of the language. Monomorphemic terms are relatively sparse in the nominal lexicon of Seri. The language relies on idiomatic analytical descriptors similar in structure to the complex landscape terms in other areas of the lexicon of natural kinds – such as ethnobiological nomenclature – and artifacts as well. This analytical system of linguistic categorization promises a potential of providing new insights into the interface between language and conceptual structure. In future work, we intend to explore this potential in further elucidating the linguistic categorization of the landscape domain in Seri.

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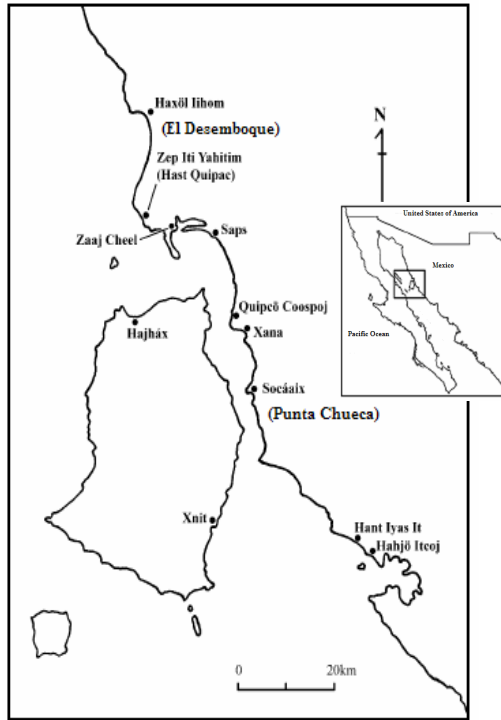**Figure 1**. *The Seri territory (adapted from Moser and Marlett 2005: 16-17)*