The language of space in Yéli Dnye

Stephen C. Levinson

5.1 The language and culture of Rossel Island

Rossel Island lies at the eastern end of the Louisiade Archipelago, the last landfall in Milne Bay Province, Papua New Guinea. Its remote location in difficult seas has limited outside influence, nevertheless Rossel has always been part of a wider island network, for example feeding shell necklaces into the Kula ring.1 Before the Second World War, one Australian family ran a coconut plantation there for forty years. Since the war, Rossel labour has been used on the mainland, and the United and Catholic churches have run effective mission stations, bringing primary education in English to most children. Trade stores are badly supplied, and Rossel belongs only marginally to the cash economy, producing small amounts of copra and sea produce. Subsistence agriculture is based especially on sago, taro and yams, with protein from the sea. The population stands at about 4,000.

Both the language and the culture of Rossel are distinct from the Austronesian cultures on surrounding islands. Rossel canoes, houses, song styles, traditional dress and ornament are all distinctively alien to the surrounding peoples, and the language is regarded as unlearnable by outsiders. Rossel culture is built on a matrilineal clan system with theoretical ownership of land and sacred places running in the matriline, but with practical inheritance of land based on patriloclal residence in small hamlets. It has a renowned system of shell money, the focus of anthropological investigations by Armstrong (1928) and Liep (1981, 1983, 1989a, b).

Yéli Dnye, 'Rossel language', is the primary language of day-to-day communication (in the literature it is variously known as Yele, Yela, Yeletnye or Rossel). Melanesian pidgin English (Tok Pisin) is not spoken much, although the pidgin based on Motu used to have some limited currency. Many people

My thanks are due to Isidore Yidika, my principal assistant, and to Jim Henderson for detailed comments on this paper.

1 The symbolic exchange system linking many islands in Milne Bay Province (Leach and Leach 1983). Rossel always lay outside this system but participated by providing valuable shells to neighbouring Sudest, and gaining in return pottery and stone axe valuables.
have some knowledge of the languages on surrounding islands, especially Misima and Sudest, but English is the main secondary language in the Province as a whole. Yélî Dnye is a language isolate, whose relations to any other languages are completely obscure. It is clearly not Austronesian, with very few discernable loans or influences, and has many features associated with the mainland ‘Papuan’ (i.e. non-Austronesian) languages (e.g. free phrase order with verb-final tendencies). Wurm (1982) set up an East Papuan phylum, to which the Rossel language is supposed to belong, but the reasoning is not explicit and no evidence is provided. On the other hand, parallels in the pronouns and the semantic basis for many grammatical categories suggest links to the mainland, especially perhaps to the Gorokan languages. The Rossel phoneme inventory is peculiarly large, but some of the same distinctions (e.g. prenasalization, labio-velar segments, etc.) can be found in mainland languages. Whether the Rossel language is a relic of a much larger island population now submerged under a sea of Austronesian (as Capell 1969 and others have suggested), or whether its speakers were successively pushed down from the Highlands and out to sea by the Austronesians (as Wurm 1982 seems to suggest) is an issue that may perhaps be resolved by the study of human genetics in the future.

5.2 Some salient features of the grammar

Yélî Dnye has distinct western and eastern dialects, and the following description is based on the eastern dialect which is the basis for a bible translation, a short grammar and dictionary by the SIL linguists James and Anne Henderson (Henderson 1995, Henderson and Henderson 1999). I have adopted Henderson’s (1995) practical orthography together with his analysis of the complex tense/aspect system in what follows.

**Phonology**

The language has a large and complex phoneme inventory (ninety segments by traditional criteria), with a number of sounds apparently unique in the languages of the world (e.g. a full series of stops with simultaneous bilabial closure; see Ladefoged and Maddieson 1996: 334), and in this respect is unlike any other Papuan language (cf. Foley 1986). Consonants have four places of articulation (p, t, ŋ, k), and five ‘manners’ of co-articulation (simultaneous bilabial closure, prenasalization, nasal plosion, palatalization, labialization or labialization plus palatalization), yielding fifty-six segments (since not all possibilities are realized). There are no consonant clusters, and this allows us to write single consonants with up to four characters in a normal orthography that truncates many IPA muographs. The vowel system has five front vowels, four back ones and two mid vowels, multiplied by phonemic length and nasalization, yielding thirty-four distinctive segments (Henderson 1995: 3, Levinson in preparation; the maximum attested in any other Papuan language seems to be eight vowels, see Foley 1985: 54). The whole phonemic system is one of the most unusual to be found, and almost certainly the most complex in the Pacific. For the interpretation of the practical orthography see Henderson (1995), and for the phonetic details see Maddieson and Levinson (in preparation).

**Morphology and syntax**

Parts of speech include nouns, verbs (morphosyntactically distinguished as transitive, intransitive), adjectives, adverbs, pronouns and demonstratives, quantifiers, postpositions, pre- and postverbal particles indicating tense/aspect/person, etc., and minor form classes such as sentential connectives, quotatives, etc.

The morphology is very reduced by virtue of the fact that most inflectional functions are indicated by particles or free morphemes, which subsume multiple grammatical categories (like person/number/aspect/tense) in single portmanteau morphs. There are a few bound morphemes, such as -ni (a nominal specifier), a nasal feature N- (2nd person possessive prefix, which fuses with the first segment of the head), a- future tense. Inflectional functions are also frequently, but irregularly, indicated by root suppletion, so that verbs may have distinct roots for proximate past tense, remote past tense, punctual vs. continuous aspect, non-singular non-third person object, and so on. Derivational morphology is highly restricted to a few lexically restricted functions, e.g. deriving ‘continuous aspect’ verb stems and nominalizations from some verb roots by reduplication (but for many verbs this is marked by suppletive roots). Free morphemes perform many of the functions of derivation, e.g. postpositional acts like a general adverbializer. Thus, the pattern is to indicate case, agreement, plurality of nominals, etc., in (such usually) postpositional particles and clitics.

In general, the genius of the language may be summed up by the injunction ‘Lexicalize!’ It is thus paradigmatic that the verb for giving should have eight roots (see (1) below), splitting even on person of recipient. Consequently, in all sorts of areas of the grammar where one might expect systematic inflection, derivation or alternation, one finds instead suppletion or the handling of functional shifts through multiple lexemes.

The language has an SOV word-order tendency, although phrase order is in fact very free (all major phrases can occur in any order in the clause). In line with that SOV tendency, the language has postpositions marking grammatical functions like ergative and oblique NPs, and postpositions constructing adjunct
phrases (e.g. adverbial temporal and locative phrases). It is not, however, left-
branching: most modifiers and relative clauses are on the right of the head. The
language marks ‘cases’ (with postpositional clitics) as follows:

zero Absolutive, Locative
ngē Ergative, Instrumental, Experienter, Factitive and other functions
kai Dative (restricted locative uses as human Source or Goal of
movement)

kii Comitative

I recognize the zero postposition as a locative because a phrase without a postpo-
sition is either interpreted as the absolutive NP, or has a locative interpretation. (Many nominals describing spatial parts have thus become reinterpreted as
postpositions.) In addition to the zero locative (for nameplace, institutional
locations, home, etc.), there are many detailed spatial postpositions described
below.

As these facts indicate, as far as NPs go, the language is ergative/absolutive
in type. Ergative NPs are obligatorily case-marked, and indefinite absolutive NPs
are also distinguished by having the indefinite quantifier extracted from the
NP and placed in a preverbal position (Henderson 1995: 40–1). These free
pronouns are in most circumstances nominative/accusative in type, but can receive
ergative marking. Verbal cross-referencing also does not: directly align with
ergative/absolutive distinctions, marking transitive and intransitive subjects in
the same way in the preverbal cross-referencing, although in distinct ways in
the postverbal cross-referencing. Yëll Dnye could thus be said to be of split
ergative type – with ergative-absolutive marking of lexical NPs and nominative-
accusative marking of most pronouns and cross-referencing (but see Levinson
in press).

The verb phrase is the locus of considerable grammatical complexity (well
described in Henderson 1995). As mentioned, the verb itself very generally
has suppletive roots to indicate tense, aspect, mood, and occasionally other
properties (like person). But whether a particular verb will supplet on these
dimensions is unpredictable, as illustrated in (1) below. Sometimes a special
form is used when the verb is followed by a non-zero inflectional particle
(marked ‘followed’ below).

I do have a few more general uses of ka, e.g.

ki yoni ka ka laps
This tree to Deictic+C TAM going ‘He is going towards the tree’

3 Postposition ngē has a wide range of topicalizing adverbializing functions (for, e.g., time and
manner expressions) and is the general way to incorporate extra oblique NPs.

4 This is part of a larger pattern of quantifier floating, in which numerals on objects also occur in
the same position (Henderson 1995: 59).

(1) Suppletive roots (all forms Punctual Aspect except last)

<table>
<thead>
<tr>
<th>Imperative</th>
<th>'stand up' 'go and get'</th>
<th>'wash self' 'kill by sorcery'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperative</td>
<td>ghê ng:uu</td>
<td>kwidi mgoa</td>
</tr>
<tr>
<td>Proc. Past</td>
<td>ghê nmgê</td>
<td>kudu mgoa</td>
</tr>
<tr>
<td>Remote Past</td>
<td>ghê ngwôdu</td>
<td>kpê mgoa</td>
</tr>
<tr>
<td>Followed</td>
<td>ghêddi —</td>
<td>kpê mgoa</td>
</tr>
<tr>
<td>Contin.</td>
<td>wowo myu:uw:ng:uu</td>
<td>kuku mgoa</td>
</tr>
</tbody>
</table>

| Aspect            | yânu kî                 | têni t:oo                   |
| Proc. Past        | yângâ                  | kê t:ângo                   |
| Remote Past       | yângô                   | kê t:ee                     |
| Followed          | yêmi kuwo              | t:emî                       |
| Contin. Aspect    | lêmi ghidi see          | t:ôngi see                  |
| Proc. Past        | lê gihtî see            | têddî                       |
| Remote Past       | loo ghô/gişhô see       | têddî                       |
| Followed          | lêghê see               | têddî                       |
| Contin. Aspect    | lêphî ghêphê pho        | todoto                      |

The verb is flanked by largely unanalysable clitics (or portmanteau morphemes)
which together succinctly indicate tense, aspect, mood, transitivity and per-
son/number of subject and object, often together with other optional gram-
matical categories. The preverbal particle marks the six tenses, two aspects,
three moods, three persons, three numbers (singular, dual, plural) – hence there
are theoretically over 500 possible combinations to be represented in unique
portmanteau morphs (not counting additional grammatical categories like evi-
dentiality, associated motion, deixis, repetition, which also get fused into these
morphs – for some details see Henderson 1995). In practice the number is
reduced by conflation, e.g. in the punctual aspect the tenses ‘near past’ and
‘remote past’ are conflated, while in the continuous aspect ‘near past’
‘immediate past’ are conflated in the first and second persons. The postver-
bal particle marks transitivity, aspect, mood and person, and number of both
object and subject. Here again there are mercifully conflation, some following
distinctively Papuan patterns like ‘monofocal’ grouping of first person (singu-
lar, dual and plural) with second and third person singular, with the remainder
marked ‘polyfocal’. Where the postverbal particle has zero realization (e.g.
with transitive verbs in proximal tenses with third person singular objects), the
verb root often switches into a suppletive form. Despite the confluations there are hundreds of particles.

A few examples of the verb phrase, presented in (2), will help to prepare for the glossed examples illustrating matters below. Note how the verb root changes its shape according, especially, to tense and aspect, and according to whether there is or is not a postverbal clitic. Note too that the pre- and postverbal clitics encode information redundantly, but not transparently. These particles often allow multiple conflicting interpretations, e.g. di vye ne could mean either ‘he was NOT hitting me continuously today’ or ‘he was (positive) hitting me yesterday’, although usually the intersection of pre- and postverbal clitics together with the shape of the verb root serve to disambiguate matters effectively (negation is incidentally particularly complex).

(2) Pre- and postverbal inflectional particles

a. ni
l o o
1.s+Rempast+Punct.Aspect went_Rempast
φ
Punct.Aspect.RemoteTense.singSubject
‘I went (long ago)’

b. nyi
l ee
1.dual+past went_Rempast_followed
knapwo
1.dual+Indic+Remote+Intrans
‘We two went (long ago)’

c. a-ni
l epl
Pres+Cont.-1s+Pres+Cont. go-Contin.Aspect
‘I am going’

d. a-nyi
l epl
Pres+Cont.1.dual go-Contin.Aspect Indic.Pron.dual+Intrans
‘We two are going’

In the glossed examples that follow, not all of the content of the inflectional particles is always provided, as it makes the glosses unreadable; sometimes

6 Main abbreviations are as follows: Rempast = remote past, Immpast = immediate past, Pres = present, Pron = proximal tense, Fut = Future; PunctAsp or PI = punctiliar aspect, indicative mood; Cont or Contin. Aspect or CI = continuous aspect, indicative, Hab = habitual mood, Indic = indicative mood, Imp = imperative mood; 1s, 2d, 3p = 1st person singular, 2nd person dual, 3rd person plural, etc. (Subject unless otherwise stated); Indef = indefinite; S = subject, O = object (also Subj, Obj); Intrms = intransitive verb; Trans = transitive verb; tv = transitive verb clitic; Poss = possessive; PostN = post-verbal nuclear portmanteau clitic; EPST = epistemic status marker; ERO = ergative marker; CERT = epistemic marker of certainty; Close = proximal deictic in preverbal nucleus; MOTION = associated motion in preverbal nucleus; TAM = Tense-Aspect-mood marker.

7 I will resort simply to ‘TAMP’, i.e. ‘tense/aspect/mood/person+number’ marker (and I will ignore ‘zero-particles’, as at the end of the first example).

An important feature of the grammar is that argument-changing operations on verb stems hardly seem to exist—they are no passive, antipassive or transitivizing derivations (apart from the use of a causative verb). The main exception is intransitivization by object incorporation. The strategy of the language is rather to have a different verb root for each subcategorization frame. Thus there are distinct intransitive vs. transitive verbs for, e.g. tiyipé ‘sail-by-canoe’ and kēdē ‘sail the canoe’, or yē ‘go-around (circumambulate)’ vs. yādā ‘go around a place’.

Equational sentences or nominal or adjectival predicators are expressed without a verb, but existential and locative statements require one of three verbs, ‘sit’, ‘stand’, ‘hang’, determined partly by conventional collocation with the subject, partly by positional information, as described in 5.3 below.

The NP is also complex. The nominal head often has suppletive forms, depending, for example, on whether or not there is a deictic determiner preceding the noun, or a quantifier following it. Thus we have regular pl ‘a man’, yi pi-ni ‘that man’, but irregular pryā ‘a woman’, yi pryūa ‘that woman’, and so on. Plural markers also sometimes fuse with the head on an irregular basis (e.g. lēmi ‘big man’, lēma ‘big men’). There are classifiers, probably remnants of a more extensive system. The canonical structure of the adjectively modified noun phrase is thus:

(3) [[Determiners] [Head N] [Classifier Nominal] [Adjectival Phrase]]

as for example in:

7 The zero-particle has a wide range of meanings, as do many of the non-zero forms:

(a) before the verb, for indicative moods:
Punct.Aspect+p/Cont. Medial.Punct3s/dpl OR Cont.Aspect+p/Immpast3s/dpl or for imperatives:
Immpunctualised3s/dpl OR Imp Cont.1s/dpl
(b) after intransitive verbs; for indicative moods:
Punct.Aspect+p/Cont.post. tense+s/ singSubject
Cont. Aspect+p/cont. tenses+ singSubject
for imperative mood: 2s+i- Imper. 1s+i-Imper
(c) after transitive verbs:
3 Object+Cont.Aspect (for imperatives only if subject is 2nd or 3rd person)
3 Object+p/Cont. Aspect+p/ MonofocalSubject (Monofocal subjects are singular OR 1st person)

8 There are perhaps traces of an earlier causative alternation, by, e.g., nasalization of vowels (as in prvī ‘exist’; prv p ‘put outside’), but if so this is no longer productive.

9 It is possible that the classifier nominal is in fact the head noun, thus aligning with the normal order of the head in compound nouns. If so, the example that follows would gloss more like this bookish bundle is red than ‘this bundled book is red’.
relations, or (traditional) clothing-body relations, or objects in characteristic locations (e.g. cigarette in mouth), the marking of the topological relation on the ground nominal may also be omitted. Otherwise, a postposition follows the ground nominal, and in all cases a locative predicate is employed, which is nearly always one of a fixed set in the case of static locations. The basic locative construction in Rossel may be illustrated from descriptions of the ‘Topological Relations Picture Series’ (Chapter 1, Figure 1.2). Here is the description of Picture 2, depicting a single fruit in a bowl, annotated with the terminology we will use:

(6)

Picture 2: fruit in bowl
Figure Ground postposition positional verb
kémi kigha kapi k:00 ka tóó mango fruit cup in deictic+TAMP sits ‘The ripe mango is in the cup’ (or ‘There is a mango in the cup’)

The following is a description of Picture 1 depicting a cup and saucer in the middle of a table:

(7)

Picture 1: cup on table
Figure Ground postposition positional verb
kapi tepili u mbémé ka Def-3SpPresCont kwo cup table its on-top ‘The cup is standing on the table’

The postposition mbémé may be described as having a strict ON meaning: it can be used only where the figure is located above the ground (in the gravitational vertical dimension), and is in physical contact with it – even then, under certain conditions (like the figure covers the ground, or the ground is a body part) other postpositions or constructions will pre-empt mbémé.

There is a minor constructional difference between the sentences in (6) and (7). In the former, the postposition kwo belongs clearly to the postpositional word class and functions as a fully non-nominal head of a postpositional phrase or PP. The construction in (7), however, is of the form: [cup][table][3s.possessive][top][is][standing] where the phrase in bold is a constituent which can be moved around (all orders of subject, PP and verb phrase are possible). Although a mbémé functions just like a monolexemic postposition, heading a PP, the possessive indicates a grammaticalization path whereby the phrase in bold type is a complex NP with zero-locative marking indicating ‘(at) the table’s top’. Those postpositions which take a possessive are often

10 A curious exception is the name for Rosssel island itself, which usually takes the postposition p:wa ‘(on, attached to)’, as in Yell ‘p:wa ‘on Rosssel island’. There is perhaps a universal hierarchy underlying the tendency to drop overt marking of locative relations: Deictic-Adverbial > Home-Base > Place Name > Descriptive Phrase Denoting Place > Object-as-Location. But I know of no discussion.
transiently related to existing spatial nominals, e.g. *u chedē 'by the side of' from *chedē 'side'. However, most postpositions do not take the possessive *u, as in (6). Similarly, consider (8):

(8) Picture 10: ring on finger

ring kéepyàd p:uu ka kwo  
ring finger attached Def+3SPresCont stand

'The ring is standing attached-to the finger'

Here the postposition p:uu forms a simple PP constituent with the ground NP. P:uu can be glossed 'attached to', so that an object tied to, clipped on, stuck on, or naturally attached to a ground object can be so designated. However, again other postpositions may pre-empt p:uu – for example where the attachment is by 'spiking' by a ground which is a sharp or thin projection.

The range of spatial, topological postpositions in Rossel is very extensive, making many fine distinctions; this is the subject of the section below. But there is another crucial part of the construction, the locative verb. Rossel has three main locative verbs, which we may gloss 'sit', 'stand', and 'hang', on the basis of their meanings when applied to prototype figures (e.g. humans in the case of 'sit' and 'stand', bags in the case of 'hang'). When we vary the scene, we may get the same postposition p:uu, but a different locative predicate, as in this description of a stamp stuck on an envelope:

(9) Picture 3: stamp on envelope

stamp envelope p:uu ka t:à  
stamp envelope attached Def+3SPresCont hanging

'The stamp is hanging attached-to the envelope.'

The factors dictating a choice of locative verb are complex and depend on the interaction between arbitrary conventions and the shape and position of the figure object. The details are dealt with in Section 5.3.3.

5.3.2 The system of topological postpositions

Many grammatical functions are served by postpositions. A large set of them are used to build oblique or adverbial postpositional phrases or Ps. Amongst these are many spatial postpositions, and a (semantically defined) subset of these are specialized to topological notions, essentially kinds of propriety, or

11 A number of these examples include English words for unfamiliar Western objects for which there is no Yell Dnye equivalent. English is the lingua franca of the province and the language of education, but by no means universally spoken on Rossel. Normal elicitation based on picture stimuli was done by substituting local analogues for the pictured scenarios – I give the closer equivalents here from educated consultants for comparative purposes.

The language of space in Yell Dnye overlaps between the spatial regions of figures and grounds. In descriptions of the seventy-one pictures in the 'Topological Relations Picture Series' (TRPS), twenty-five distinct postpositions were employed by four consultants. Table 5.1 below gives thirteen of the more frequent forms which might be considered translational counterparts to English 'in' and 'on', with approximate glosses and a sketch of the criterial semantic conditions that have to be met for each form.

Inspection will show that there are two forms dedicated to containment ('in' concepts), three forms that cover attachment notions, and no less than six forms that cover the semantic space subsumed by English on or above, i.e. the concepts of surface support or vertical superposition (the intersection of which arguably gives us prototype ON relations). One thing that rapidly emerges is that adequate description of these postpositions requires taking pragmatic factors into account. Let me illustrate this with regards to the attachment postpositions. Note that not all attachment scenes will be described in attachment terms – e.g. for fruits on a tree, or leaves on a branch, the preference is for use ofnkwo, which emphasizes distribution of multiple figures all over ground. Leaving this kind of case aside, we have the following attachment postpositions (repeated in simplified form from Table 5.1):

(10) Attachment postpositions

<table>
<thead>
<tr>
<th>Postposition</th>
<th>Gloss</th>
<th>Hypothesized semantic conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>p:uu</td>
<td>'on a vertical surface'</td>
<td>Figure is attached to (nearly) vertical surface</td>
</tr>
<tr>
<td>'nedé'</td>
<td>'stuck on hook/spike'</td>
<td>Figure is attached by projecting, piercing part of ground (hook, spike, etc.)</td>
</tr>
<tr>
<td>p:uu</td>
<td>'stuck on'</td>
<td>Figure is attached strongly to ground, regardless of type of fixing</td>
</tr>
</tbody>
</table>

Let us now concentrate on the pair of alternatives 'nedé vs. p:uu (analogous remarks hold for the other pairs of terms). The glosses, derived from inspection of the pictures to which each postposition applies, suggest that 'nedé and p:uu are in privative opposition – that is, that 'nedé is a more specific subcase of p:uu. If so, pragmatic theory suggests that, although in every case where 'nedé is applicable p:uu should be applicable too, still speakers should hesitate to label a scene with a less informative description (p:uu) where a more informative one ('nedé) is equally available. This follows from Grice's first Maxim of Quantity (see Levinson 1983 for exposition), which enjoins a co-operative speaker to provide as much information as is pertinent – thus, for example, if I saw a rat in the larder, it would be misleading to say 'I saw an animal in the larder', for
<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss, Picture nos.</th>
<th>Semantic conditions (with numbered use types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>k:oro</td>
<td>'in' 2, 32, 14, 15, 47, 19, 54, 71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) 3D Ground: convex closure of Ground includes substantial portion of Figure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) 2D Ground: Ground includes whole of Figure</td>
<td></td>
</tr>
<tr>
<td>u mëndë</td>
<td>'inside', 'enclosed in' 30, 67, 18, 32, 54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) Convex closure of Ground must fully include Figure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) Figure must have central portion enclosed in Ground</td>
<td></td>
</tr>
<tr>
<td>yëdë</td>
<td>'on a surface' 19, 40, 47, 68</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is in contact with a Ground that can be treated as 2D (e.g. cloth, plate); Ground need not be horizontal (e.g. letters on T-shirt)</td>
<td></td>
</tr>
<tr>
<td>(u) mëndë</td>
<td>'on top of' 1, 5, 8, 17, 23, 29, 34, 36, 40, 43, 46, 59, 62, 65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is over and directly supported by Ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) Figure is single and substantially covers Ground, or is plural and is distributed all over Ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) Figure is on top of (and in middle of) Ground</td>
<td></td>
</tr>
<tr>
<td>t:ëdë</td>
<td>'stuck on spike/holder/clip' 9, 20, 22, 30, 33, 37, 56, 57, 63, 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is attached to projecting Ground (hook, spike, etc.)</td>
<td></td>
</tr>
<tr>
<td>p:au</td>
<td>'on a vertical surface' 17, 25, 26, 42, 44, 50, 52, 55</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is attached to vertical (or near vertical) surface</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) Figure is fixed strongly to Ground, regardless of orientation or method of fixation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) e.g. of sticks or ladder*</td>
<td></td>
</tr>
<tr>
<td>p:au</td>
<td>'attached on' 3, 4, 7, 9, 10, 12, 18, 30, 21, 25, 27, 28, 30, 33, 35, 37, 41, 44, 48, 50, 52, 55, 56, 57, 61, 62, 66, 68, 69 'leaning against' 58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is animal/human standing/sitting on Ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is in middle of surface of supporting horizontal surface of Ground, or in middle of line or volume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is on apex of vertically extended Ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure is vertically above, but not supported by Ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) Figure is vertically beneath (part of) Ground (within its convex closure?)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) Figure cannot be (fully) seen without removing Ground</td>
<td></td>
</tr>
</tbody>
</table>

* Ladders on Rossel are in fact normally firmly attached to raised houses, to which they give access, and thus there is a clear link or 'denoting context' between senses (i) and (ii).

The language of space in Yell Dnye

that would implicate (pragmatically suggest) that I did not know which kind of animal it was. This inferential tendency is well-known 'Horn scales', ordered pairs (or n-tuples) of strong vs. weak descriptions like <coll. some >, where saying Some of them came implicates rather than entails ‘Not all of them came’ (Levinson 2000b: 75ff.). Thus we may suspect that our postpositions form a similar Horn scale:

(11) `<nedë, p:au>`
< STRONG, WEAK >
Attachment by Attachment
spike or hook by any means

There are a number of usage patterns that support this analysis. Inspection of Table 5.1 will show that p:au and nedë have mostly distinct but still overlapping application to the picture stimuli, and that p:au has a larger distribution, as expected. The kind of separate, but overlapping, distribution we get can be illustrated as follows, where for four consultants we indicate how many thought each of the two postpositions appropriate for the scene to be described:

(12) Distribution of first choices by four informants for attachment postpositions

<table>
<thead>
<tr>
<th>Scene</th>
<th>Picture No</th>
<th>nedë, p:au</th>
</tr>
</thead>
<tbody>
<tr>
<td>papers on spike</td>
<td>(22)</td>
<td>4</td>
</tr>
<tr>
<td>apple on skewer</td>
<td>(70)</td>
<td>4</td>
</tr>
<tr>
<td>coat on hook</td>
<td>(9)</td>
<td>3</td>
</tr>
<tr>
<td>clothes pegged on line</td>
<td>(37)</td>
<td>2</td>
</tr>
<tr>
<td>pendant on chain</td>
<td>(57)</td>
<td>1</td>
</tr>
<tr>
<td>mud on knife</td>
<td>(12)</td>
<td>0</td>
</tr>
<tr>
<td>band-aid on leg</td>
<td>(35)</td>
<td>0</td>
</tr>
</tbody>
</table>

What the distribution shows is that there is clear consensus that 'spiking' scenes require nedë, and hooking scenes are also good candidates; while at the other extreme, 'sticking' scenes require p:au, with attachment by loop of chain also being a good candidate. But we have a tie for the scene where clothes are attached to a line by grip-action pegs. So far, this distribution of responses is compatible with, say, a prototype analysis with fuzzy boundaries that overlap in the middle range. However, the pragmatic analysis makes a further prediction: in the marginal cases, like clothes-on-line, anyone who offers nedë will readily accept p:au, because the stronger, more specific conditions will entail the weaker conditions, while the choice of the stronger form is merely a pragmatic preference. That is, we can expect a consultant to back off from a stronger statement and accept a weaker one, but not to first announce a preference for the weaker statement, then accept the stronger: in the former case a speaker...
would be overriding a pragmatic strategy, in the latter case he should have said the strongest statement he thinks applies, and so not be willing to upgrade the statement, and override a semantic condition. Here is the actual distribution of choices by the four consultants:

(13) Clothes-on-line scene: preferred postpositions
Consultant First choice Second choice
Y  nedé  p:ua
A  nedé  p:ua
B  p:ua —
E  p:ua —

We therefore conclude that a pragmatic analysis is correct: the two postpositions overlap in extensions, but a pragmatic principle (Grice’s first Maxim of Quantity, or the I-principle of Levinson 2006b) induces a division of labour. This analysis shifts a large part of the burden of Saussurean oppositions out of the semantics into the pragmatics and has general application to other material in this volume.

Such an analysis also seems correct for other postpositions in the set. For example, the IN postpositions u méné and k:oo seem to have similar sense relations: k:oo implies partial inclusion (like English in), while u méné has the stronger implication of complete containment under convex closure (think of this as a Christo wrapping of the ground), and moreover the container should have a narrow opening, thus:

(14) ‘in’ adpositions

< (u méné,
< STRONG, WEAK >
G fully contains F G at least partly contains F G has narrow opening

Again, we get a similar distribution of responses: a certain degree of overlap in extension (i.e. pictures where both can be applied), but in these overlap cases a distinctive pattern: any consultant who offers u méné will accept k:oo, but not vice versa. The upshot is just the flexibility of use combined with preferences that we expect on a Gricean account: choose the strongest, most specific assertion in line with your understanding of the scene, and assume that if your interlocutor has used the postposition of general inclusion, full enclosure does not, ceteris paribus, obtain.

Another pair of postpositions in such scalar contrast are (mähemé, u pwo): both specify vertical relations between figure and ground, but only mähemé also requires contact; thus u pwo implicates lack of contact. On the other hand, mähapwo, ‘under’ is the semantic counterpart or antonym of u pwo, with exactly similar semantic generality over +/− contact. However, unlike u pwo it lacks a more specific ‘−contact’ alternate. Thus mähapwo, unlike u pwo, does not implicate ‘not contacting’, and can be used equally for a ball beneath a chair, or a spoon under a cloth. The analysis allows us to see that mähapwo does have an exact semantic antonym, namely u pwo, even though pragmatically it is opposed to both u pwo and mähemé.

We may add that the topological notion of proximity is covered by a range of postpositions such as those in Table 5.2. In addition to these, postpositions with projective properties (involving notions like ‘in front’, ‘behind’) are much employed and will be discussed in Section 5.4 under the rubric of ‘frames of reference’ below.

Now, for attachment scenes especially, a different construction is also available. The construction is just the same, with a special locative verb, except that the postposition is dropped altogether. Note that in the case of place names, deictic adverbs (‘here’, ‘there’) and home-base locutions (p: o ‘home’) this zero-postposition construction is the normal construction. However it does not occur only with such intrinsically spatial nominals; it may also occur where the ground denotes a physical object. This zero-postposition construction has a limited, but systematic, distribution in our picture-book scenes, as shown in Table 5.3.

The generalization for the zero-postposition construction is that it cannot be used for unexpected, non-stereotypical relations. Characteristic motion and

---

### Table 5.2 Postpositions implying proximity

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss, Picture Nos. (No. of uses)</th>
<th>Semantic conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>a chöld</td>
<td>‘bend’</td>
<td>16, 14, 31, 53, 63</td>
</tr>
<tr>
<td>a mähr:</td>
<td>‘ner’</td>
<td>16, 14, 31, 53, 63</td>
</tr>
<tr>
<td>kawu</td>
<td>‘outside’</td>
<td>15</td>
</tr>
</tbody>
</table>

---

### Table 5.3 Use of zero-postposition construction

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss, Picture Nos. (No. of uses)</th>
<th>Semantic conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>o (Zero-postposition)</td>
<td>‘Stereotypical extension’ 7(1), 11(2), 18(2), 21(2), 27(1), 39(1), 42(6), 46(2a), 51(1), 62(1), 63(1)</td>
<td>Part-whole relations (apple-branch, strap-bug, hole-sheet), characteristic motion (boots, spiders), traditional adornments (headband, armband, belt), thing in ‘body part’ (cigarette, cork)</td>
</tr>
</tbody>
</table>
dispositions (whether ships on the sea, or fruit on a branch) invite the dropping of the postposition. Non-traditional adornments (rings, hats) require postpositions, traditional adornments (armbands, belts) do not. All this is in line with cross-linguistic tendencies. Many languages with systematic case marking may oppose a general locative case to a series of adpositions, e.g. in Tamil one can use the locative case for nearly any stereotypical extension, without specifying IN/ON or other relations in the rich postpositional system; to use those postpositions then implicates some kind of special situation. (Similarly, many languages, e.g. Guugu Yimithirr, drop the locative verb in these kinds of situations, where Rossel drops the postposition.) What these reduced constructions signal is: ‘business as usual’.

Again, a perfectly general pragmatic principle is responsible for this pattern, Grice’s Second Maxim of Quantity, or my I-principle (Levinson 2000b). The reduced construction induces implicatures to the stereotype, and such reduced constructions can then subtly contrast with the full postpositional construction, which can then suggest an unusual, non-stereotypical extension by M-implicature. This explains why our Rossel informants are happy to use the zero-postpositional construction with traditional bodily adornments, like armbands, but resistant to using it with western adornments like watches, rings or metal necklaces.

Let us illustrate this pattern with one of the competing ON-postpositions which were mentioned earlier. The ON-related postpositions include a central, horizontal-support relation, mbêmé, and then branch into many different more specific types, according to, e.g., kinds of attachment. Mbêmé makes no claims about whether the object is attached or free-standing, but given the alternative attachment-specifying forms, tends to implicate that the figure is unattached (except where common sense indicates otherwise, as with trees on hillsides). It contrasts, too, with the more specific nkwo do, specifying overall coverage or central placement (also indicated unambiguously by ‘nukn pu:u’, and with pvomo, a form that seems to be restricted to animate figures, and also with yede, which requires a flat ground object. But mbêmé is the ‘on’ postposition with the widest extension, implying vertical super-adjacency and support. Now, take the following contrasting sentences describing a headband around a man’s head:

(15) Picture 46: headband
a. kpílí pee pi képa mbêmé ka t:a
cloth piece person forehead mbêmé ka t:a
‘The piece of cloth is hanging on the person’s forehead’

b. kpílí pee pi képa mbêmé ka t:a
‘The piece of cloth is hanging (around) the person’s forehead’

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Sentence (b) was the preferred form: it says just what needs to be said for an accurate description, and thus I-implicatures stereotypical extensions. The first sentence (a) is proxim compared to (b): the postposition mbêmé therefore M-implicates that the headband isn’t around the hat-line but is perched on top of the head. That implicature is avoided by an alternative reduction as in (c), where the ground object (the head) is omitted but the ON postposition maintained, as in English ‘He’s got a hat on.’ Finally, one can switch the locative verb to another of the three central alternates as in (d): once again, the message now is ‘non-stereotypical extensions’, specifically here what is suggested is that the headband is not firmly tied on. This brings us to the next subject: locative verbs, but first let us sum up:

1. There are a plethora of local postpositions in the language;
2. Semantically compatible postpositions become contrastive pragmatically;
3. Pragmatic principles also play havoc with our basic locative construction, leading to systematic reductions just in the case most common, stereotypical extensions are intended, with the seemingly paradoxical result that our basic construction will fail to describe the situation just in the most stereotypical, basic usages!

5.3.3 The positional verbs

Yell dyre belongs to a wide class of languages, like Dutch, Arrernte or Creek, which have a small set of locative verbs in systematic opposition. These verbs are often drawn from, or overlap with, human posture verbs glossing ‘sit’, ‘stand’, ‘lie’, but they also often involve a less anthropomorphic ‘hang’. In the Rossel case, we have verbs that in their postural use would gloss ‘sit/lie’.

12 Henderson (1995: 75) seems to suggest that only k:oo can occur without explicit Ground, but there are plenty of sexual examples of other postpositions occurring alone, including the anomaly of k:oo, koo ‘outside’, as well as mbêmé ‘on’, and many others.

13 The verb I will simply gloss ‘sit’ clearly covers both sitting and lying. Nevertheless, sitting is the prototype interpretation, and to indicate lying one has to say in effect ‘sitting prone’ (pi:pi a skó), or ‘sitting’ (dpi). Incidentally, these verbs collocate only with continuous aspect, and afo has punctual counterpart yád ‘sit down’, while k:oo has the punctual counterpart k:oo ‘stand up’, with its own continuous form wó:ó. There are independent roots for the causative counterparts of the main positions: kái ‘make stand’, yé ‘make sit’, k:oo, ‘cause to hang’.\n
\n
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These verbs thus have a sortal nature—they constitute a kind of nominal classification, but a kind which is not strictly determined by either noun or referent, as will be explained below.

One other preambule. It is well known that there are very close relations between existential and locative constructions. Even though it is clear that the two constructions potentially answer very different kinds of question (Are there any Xs? vs. Where are the Xs?), it is easy to evoke the underlying semantic distinctions that have been proposed. For example, the presumption that locatives must have definite subjects while existentials have only indefinite ones is clearly only a tendency (consider: There is only the one God); and the idea that existentials have universal spatial application is only one end of a continuum of course (There is butter on the table is just as much of an existential as There are unicorns). So it is not surprising that perhaps 25 per cent of languages seem to make no distinction at all between the two constructions (Clark 1978a: 94–6). Rossell is of this type, with no obligatory definiteness marking, so that ‘The pigs are in the forest’ and ‘There are pigs in the forest’ are expressed with the same form:

(16) nko bush/land area u ménén mbëmë a its inside pig m:ii 3s/d/plHabCont move/inhabit té S:pl-Prox(Intrans)

The relevance of this preambule is the following. First, locatives presuppose the corresponding existentials: existentials provide the ontological background for what is asserted in locatives. Hardly surprising then that abstract types or classes of locative relation may already be embedded in existential distinctions. Second, a language with obligatory positional verbs has to have default assignments of positional verb to nominal concepts. That’s because, if I want to say ‘The cup is on the table’ and must choose between ‘stand’ and ‘lie’, I may not be able to check the scene. And any language that uses positional verbs in existential statements will be forced into such default assignments: I may have no particular pigs or cups in mind, but still want to assert their existence.

All locative and existential statements must thus use one of these three verbs (or four, if one counts m:ii). But how does one know which one to choose? There are a number of layers of specification. First, there is a layer of conventional collocation. In Rossel, one can explore this default allocation using the context of negative existentials: one asks, for example, ‘How do we say “There are no islands sitting/standing/hanging in that direction”? In such a context the actual

14 There is yet another candidate, Jim Henderson points out to me, namely d:ip ‘sleep’, as in k:di d:ip k:li ku d:ip ‘The post is lying (lit. sleeping) there’. Although the verb belongs to the same class as t:aa, in the sense that it is also an invariant inherently continuous root, it is vanishingly rare in this positional use with inanimate subjects, and I am inclined to treat it as here metaphorically applied.

15 My database has twenty-seven other intranimate verbs with inanimate roots. Some of these though do have probably related roots occurring with punctiliar aspect, unlike the positional verbs.
disposition of the referent is irrelevant (in this part of the world, for example, islands come in two distinctive types, high vs. low, but in a negative existential that is irrelevant). The default collocation is immediately apparent: what we find is that what we must say is in effect 'There are no islands standing there', just as we must say 'There is no shell money sitting here', 'There are no canoes hanging there', and so on. It will be clear that, in the case of physical objects, there is some semantic motivation for the choices here, in line with shape and orientation principles to be brought out below. But abstract nouns follow similar conventions: hunger and taste 'hang', but sleep 'sits', and light 'stands'. Some examples of the default assignments in existential sentences are given in Table 5.5. There is perhaps more cultural logic behind these collocations than is immediately self-evident. For example, the sun is a human-like being in mythology, and it 'sits' like humans, but the stars are not, and they 'stand' (Armstrong 1928: 127–8); similarly snakes play a special role as quasi-human mythological beings, and they 'sit' like humans. In addition there seem to be some very general associations: prestige items tend to 'sit', long-lasting or general items tend to be associated with 'hang', temporary states or phases with 'stand'. 'Hang' seems also associated with strip-like entities, such as paths and rivers, as well as directional forces like winds and currents. Nevertheless, the collocations are conventional, and as with most conventions there is an element of arbitrariness.

In addition, some important semantic work is accomplished by collocation with positional adjectives: a number of Rosell indications are semantically general, or more likely polysemous, over such distinctions as water/river, fruit/tree, food/species and so on. For this reason, general nominal indications shape are sometimes combined with specific nominals in a loose kind of nominal classification (e.g. mbasa pu'a, 'water-side, i.e. river' vs. mbasa lè-lè 'water-pool, i.e. lake'), but another way of specifying the specific sense or referent intended is to use a positional which will make this clear. Thus mbasa 'water, creek, river' in collocation with t.a 'hang' indicates river, whereas with t.b 'sit' indicates 'pool', and so on. These facts might be taken to indicate that there is no strict collocation between noun and verb. However, other facts suggest that there can be strict collocation. For example, in the Men and Tree task (see Chapter 1, § 4.2) described in Section 5.4.2 (example (20)), where a photo is described as 'A man is standing on something', the same man in the standing position is also described as 'Man his front (lit. mind) is sitting towards the hill'. The reason is that nwo 'mind' collocates with 'sit', and even though in this case what is intended is the man's frontal orientation, it would be incorrect to say 'his front was standing'. If strict collocation were to generally obtain, then this might suggest that we should recognize distinct senses or polysemes for, e.g., mbasa 'river' vs. mbasa 'water', but this is too hasty – as we will see, there is in fact considerable flexibility in use.

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Collocational patterns indicate that the positional verbs are functioning as classifiers – but classifiers of what exactly? It is not the nouns that are being classified, otherwise there would be no flexibility of use, and of course it is in fact perfectly possible to say of that man (yi piit) that he is 'sitting', 'standing' or even 'hanging', as appropriate. Although the disposition of the referent plays a crucial role, that is not determinative either, since the same scene can be described in different ways – take, for example, the following contrasting descriptions of six tubers in a basket, some vertical, some horizontal:

(17) Picture 5 of positional picture-book (six cassavas in a basket, some upright some horizontal)

<table>
<thead>
<tr>
<th>classifier</th>
<th>sing/dual agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. kini</td>
<td>dyaa</td>
</tr>
<tr>
<td></td>
<td>yam (thornless) small pile basket in/inside Def+3SPresCont stand(s/d)</td>
</tr>
<tr>
<td>plural (3–6) marker</td>
<td>plural agreement</td>
</tr>
<tr>
<td>b. kini</td>
<td>dé kpéni</td>
</tr>
<tr>
<td></td>
<td>yam (thornless) pl basket in/inside Def+3SPresCont sitting(pl)</td>
</tr>
</tbody>
</table>

'Yams are sitting in the basket'

In the first description a nominal classifier 'small pile' is used in the noun phrase, and this triggers a singular verb of 'standing'. In the second, the same scene is described without a nominal classifier, and we have a plural verb of 'sitting'. So clearly the referents alone don’t determine the positional – it depends how they are construed. But don’t these examples show that strict noun collocation drives the system, now with or without a classifier as head of the noun phrase? It is true that dyaa 'small pile' normally collocates with 'stand', but co-occurrence with 'stand' is not automatic, and nor is the classifier necessarily the head of the noun phrase – the verb can agree with the multiple entities in the pile.17

17 For example, the following is possible with singular classifier and plural agreement on 'stand':

| pédìa dyaa | styì | mbémì | ka | wee |
| bottle small pile soil/ground/dirt on/according Def+3SPresCont stand(s/p) |
| the pile of bottles are standing on the ground |

and the following is also possible, with plural agreement on 'sit':

| pàil dyaa | mbéwo | ka | pyde |
| bail small pile on the ground Def+3SPresCont sitting(pl) |
| a pile of balls is sitting on the ground |
Table 5.5 Some default assignments of different nominal concepts to positional predicate

<table>
<thead>
<tr>
<th>SIT (66)</th>
<th>STAND (kwo)</th>
<th>HANG (t’a)</th>
<th>MOVE (mili)</th>
</tr>
</thead>
<tbody>
<tr>
<td>shell money</td>
<td>trees, palms, houses, mountains, islands, canoes, boats, roads, clouds,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>darkness, light tides</td>
<td>currents, winds, rivers rain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rain, calm-weather, mist</td>
<td>(calm?)</td>
<td>stars</td>
<td>moon, red-sky (dawn)</td>
</tr>
<tr>
<td>people, friends, relatives, descendants, wife, etc.</td>
<td>chickens, dogs, birds (in tree), pigs, fish, crabs (inside fruit), crocs (in river)</td>
<td>fish, birds, flying-fox, people,</td>
<td></td>
</tr>
<tr>
<td>water</td>
<td>fire, steam</td>
<td>crocs (on bank)</td>
<td>crocs (in general)</td>
</tr>
<tr>
<td>yams (in ground)</td>
<td>taro and tapioca (in ground)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coconuts, betel nuts, fruits on ground</td>
<td>mangoes, nuts in trees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>meetings, feasts</td>
<td>beginning of meeting, feast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sleep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>story, news</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>discipline, work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>happiness</td>
<td>threat debt</td>
<td>signs, tracks</td>
<td>flagrant formulation</td>
</tr>
<tr>
<td>fornication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>debt, peace medicine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mortuary payment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clothes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>firewood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>skin disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>books</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Figure 5.1 Choosing a positional verb: semantics of novel applications

The upshot is that clearly what is classified is the nominal concept, the way the referents are construed, and that is always a flexible matter. However, there are normal ways to construe things, and if you are going to speak colloquial Rossel you must know the kind of conventional, idiomatic collocation in Table 5.5.

For familiar objects, these conventional collocations assign a default positional to a nominal concept. But what about novel objects? Consultants can agree about how they should be described. And all sorts of now familiar imported objects with conventional assignments must once have been just as novel. So there must be an underlying system of semantical specification, which accounts not only for confident assignment of novel objects, but also for the (partial) semantic motivation behind the assignments in Table 5.5. Essentially, the underlying system seems to assign 'hang' to things fastened, 'stand' to things which have a long axis vertically, and 'sit' to the residual category. There are additional wrinkles, for example, a fastened object does
not warrant 'hang' if it projects prominently – then it gets 'stand' (hence lightbulbs do not 'hang' but rather 'stand' even when hanging from the ceiling). Figure 5.1 above sketches a first approximation towards the underlying algorithm, based on elicitation with novel objects and shapes made from plasticine.  

We now have two layers of process for assigning default positional verbs: a conventional table, and a generative algorithm that will assign default expectations to random physical objects. We may assume that the litter has played a role in the now conventional assignments to many physical objects in the table (explaining, e.g., why candles and trees 'stand'). We may take these two layers to constitute the semantic background to positional use, assigning the expected, unmarked locative verb to the relevant nominal concept. However, actual usage displays a much greater flexibility than this would lead us to expect. To explain these other uses, we must invoke a level of pragmatic explanation along the following lines.

The semantical procedures give us, as just sketched, the unmarked, expected use of a positional verb for a nominal concept. Pragmatic factors load this unmarked usage with further assumptions: the unmarked positional carries the assumption that the scene described is exemplified in a stereotypical way. The underlying pragmatic principle here is Grice's second Maxim of Quantity, 'Don't say more than necessary', or my I-principle (Levinson 2000a). For example, a bowl is normally said to 'sit' on a table, but this implicates that it is in canonical position. If one wishes to indicate that this is not the case, because, for example, it is on a swing down, that can be signalled through a swish down.

In general, for every unmarked assignment, a different marked assignment is possible, carrying a range of possible implicatures (but now by a further principle, Grice's Manner maxim, or my pragmatic M-principle, 'marked message indicates marked extension').

Thus a switch from the expected unmarked positional will implicate a complementary interpretation to what would have been I-implicated by the unmarked form, namely a stereotypical exemplification. Still, if one is a speaker, how does one know which other positional to choose, and if one is a comprehender, how does one know exactly what is implicated? There seem to be some underlying principles that guide choice and interpretation of marked choices:

1. If the figure is a physical object, actual position can be indicated by an appropriate positional where this deviates from canonical position (which would determine the unmarked choice). The appropriate positional is then partly specified by re-using the algorithm above, but now to guide selection in accord with actual rather than stereotypical position.

---

18 There are a number of known simplifications here. First, animals in their habitats (birds in the sky, or fish in a river) would be described with měi 'move, inhabit'.

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Figure 5.2 Marked usages of positionals: some meaning shifts

2. Given the associations noted above in respect of the conventional assignments in Table 5.5, one may indicate the following associations by switching to:

<table>
<thead>
<tr>
<th>Form</th>
<th>Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>tůa 'hang'</td>
<td>'long-lasting or general state'</td>
</tr>
<tr>
<td>kwo 'stand'</td>
<td>'temporary or improper state'</td>
</tr>
<tr>
<td>tůa 'sit'</td>
<td>'precarious state' (if 'hang' is unmarked)</td>
</tr>
</tbody>
</table>

These switches may be thought about as guided by 'marking rules' (Georghegan 1971), or as I would prefer M-implicatures, in any case as operations on the unmarked assignments, as indicated in Figure 5.2 (which is by no means exhaustive since these are implicatures, potentially open-ended inferences).

The pragmatic 'marking rules', operating over the unmarked output of the process of conventional assignment, together give a fairly good account of positional verb selection. Some typical shifts in interpretation are given in Table 5.6.

Here are some examples from the TRPS picture-book:

18 A kome  table u měhuŋw a kwo tůa tőō  
"The cat is under the table"
| cut table POSS under TAMP stand |
| sit |
| M-implicates |
| 'Actual position' |

32A te glass u měně a kwo tőō  
"The fish is in the bowl"
| fish bowl POSS inside TAMP stand |
| sit |
| M-implicates 'Dead' |

46 kpflii pee pi képa měněm ka tůa tőō  
"The piece of cloth is around the person's forehead"
| cloth piece person forehead on TAMP hanging |
| sit |
| M-implicates 'falling off' |
Table 5.6 Shift of positionals and their interpretations

<table>
<thead>
<tr>
<th>conventional assignment</th>
<th>shift to other positional</th>
</tr>
</thead>
<tbody>
<tr>
<td>yams</td>
<td>‘sit’</td>
</tr>
<tr>
<td>taro</td>
<td>‘stand’</td>
</tr>
<tr>
<td>humans</td>
<td>‘sit’</td>
</tr>
<tr>
<td>animals</td>
<td>‘stand’</td>
</tr>
<tr>
<td>‘hang’</td>
<td>‘sit’</td>
</tr>
<tr>
<td>bowls</td>
<td>‘stand’</td>
</tr>
<tr>
<td>balls</td>
<td>‘hang’</td>
</tr>
</tbody>
</table>

In the following example, from the Men and Tree Game (Figure 2.10), two balls pictured in an ‘away’ direction, with one partially occluding the other, are first described as ‘sitting’ near to each other, then as ‘hanging’ against one another – the switch emphasizing the lack of a gap between them. The meaning of the marked choice in this case is probably derived by allusion to the rule (sketched in Figure 5.1) that things attached to one another are generally said to ‘hang’.19

19 The following example is also interesting. In the Men and Tree Game, in addition to the photo sets containing men and trees there were photos with different arrangements of red and yellow balls of equal size. One describer interpreted the yellow ball as an upside-down yellow bowl – the red ball is described as ‘sitting’, the yellow bowl would also be ‘sitting’ in canonical position, but is described as ‘standing’ to mark its upside-down position (Figure 2.11, balls side by side):

In nài u kéténi yi spîle wàa nô pee sea/salt his/her/its side/part se/but/ie/thing egg/round, which side That round thing it’s sitting on the sea-sides wide, which side

In nài u ha/salt his/her/its side/part DeirProxS sitting/being (s/d) sea/salt his/her/its is it sitting on, the seawards

kéténi a tôô side/part DeirProxS sitting/being (s/d)

side it’s sitting on?

E: nîyà ‘yes’

In mú spîle wàa kîi nôghà kîi kere e a two Other thing round banana near there upside/down TAM standing ‘That other round thing banana-coloured upside down there is standing’?

E: nîyà ‘yes’

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(19) Director: ball dê nàmu ngîghà a *** 3dualOPProx/Hab each near DeirProxS tôô, mo sitting (s/d), dualSPProx Two balls sitting near each other,

mo nàmu púu a tâ dualSPProx each on/against/in DeirProxS hanging two hanging against each other’

I have emphasized the role of pragmatic oppositions in this discussion of the role of positional verbs, as in the discussion of the postpositions, because they play a crucial role in amplifying the signalling resources of the language. From just these three verbs in alternation, fine-grained suggestions about orientation and placements: can in fact be communicated.

5.4 Frames of reference

In order to describe the locations of similar objects separated from other objects in space, more is required than topological description in terms of spatial contiguity or coincidence – specifically, one needs to employ a coordinate system which will allow the specification of angles in a frame of reference. (I will presume the relevance of angles because all naïve human spatial systems seem to use polar rather than cartesian coordinate systems.)

Ýéli Dnye lexicalizes all three frames of reference mentioned in the introduction to this volume: absolute, relative and intrinsic. The absolute frame of reference is expressed in terms of ‘up’ or ‘down’ for east and west respectively (and thus also in terms of ‘ascend’ and ‘descend’), while the terms for ‘hillswards’, ‘seawards’ and their ilk often function as a loosely orthogonal axis.20 The intrinsic frame of reference is involved in notions like ‘facing’, ‘side’ and so on (although there is no elaborate system of body-part locations as in, e.g., Tzetal, this volume). It is also involved in some interpretations of ‘front’, ‘back’, ‘left’, ‘right’ notions. The relative frame of reference is represented by the other interpretations of terms for ‘left’, ‘right’, ‘front’ and ‘back’, as three-place predicates (e.g. X is left of Y from viewpoint Z). However, on the whole the relative frame of reference is avoided, especially the projective interpretations of ‘left’ and ‘right’ (as in ‘the ball is to the left of the tree’), in favour of the intrinsic and absolute frames.

20 While the directions associated with ‘up’ and ‘down’ may be linked to sunrise and sunset, there is also a more immediate association: given the prevailing winds, east is upwind, and west downwind, which fundamentally affects the ease of travel by boat.
Let us illustrate with the Men and Tree picture-matching task, where a director describes a photograph so that a screened-off matcher can find an identical one from a set of contrasting photos, as described in the introduction to this volume. Here a director describes Photo 2.3 to a matcher – it is essential to know their orientation with respect to mountains, sea and cardinal directions, as sketched in Figure 5.3 (the interchange has been slightly simplified for compression):  

(20) Photo-matching task: Photo 2.3. Context: director and matcher face east, with the sea on their left, and the hills on their right 

Director: 

\[
\begin{align*}
\text{pi u nunw: o kpàpu u küténi ngma a} \\
\text{man his/her/its facing hill his/her/its side/part indef DeicProxS} \\
\text{tôô siting.} \\
\text{"There's a man whose front is sitting in the hill direction,} \\
\text{yi mbwii kumu a tpe,} \\
\text{tree thin in hand DeicProxS rush/grab} \\
\text{A stick in hand he is holding,}
\end{align*}
\]

The language of space in Yéli Dnye

\[
\begin{align*}
u & \text{ nauw: o yi puu u küténi} \\
\text{his/her/its facing tree shrub his/her/its side/part} \\
\text{His front in the shrub direction} \\
\text{a tôô, u nauw: o yi u küténi} \\
\text{towards sitting/being(s/d) his/her/its facing tree his/her/its side/part} \\
\text{is sitting, his front in the tree direction} \\
\text{a tôô deictic sitting} \\
\text{is sitting'}
\end{align*}
\]

Matcher:

\[
\begin{align*}
\text{tpè mbbêmè a kwo} \\
\text{thing on/according Deictic stand(s/d)} \\
\text{‘He is standing on something?’}
\end{align*}
\]

Director:

\[
\begin{align*}
\text{nydà} \\
\text{‘yes’}
\end{align*}
\]

Matcher:

\[
\begin{align*}
\text{yi mbwii wéni pee kumu a tpe} \\
\text{tree tall/thin right side in hand DeicProxS rush/grab} \\
\text{‘He is holding the stick in the right hand?’}
\end{align*}
\]

Director:

\[
\begin{align*}
\text{nydà} \\
\text{‘yes’}
\end{align*}
\]

Matcher:

\[
\begin{align*}
\text{kpàpu u küténi a ypiw, yi-puu kpàpu u} \\
\text{hill his/her/its direction DeicProxS look shrub hill his/her/its} \\
\text{‘He is looking in the hill direction? The shrub is already standing} \\
\text{küténi wuné kwo?} \\
\text{direction already standing} \\
\text{in the hill direction?’}
\end{align*}
\]

Director:

\[
\begin{align*}
\text{nydà} \\
\text{‘yes’ ((correct photo selected))}
\end{align*}
\]

The problem has been solved in the following way:

(1) The direction in which the man is facing has been specified as towards the hills. This location ‘towards the hills’ is not the use of an ad hoc landmark, it is the conventionalized way of specifying ‘inland’, in opposition to ‘towards the sea’. For this and other communities on the (most populous) northern
shore of the island, these two terms form an orthogonal fixed axis with the terms *mada* ‘up, east’ vs. *p:dd* ‘down, west’. These four directions thus provide a systematic absolute frame of reference.

(2) The man is facing the tree. This location tells us the orientation of the man with respect to the tree; on other occasions this may be given as ‘at the man’s front is the tree’. We now have information in an intrinsic frame of reference – we know (roughly) how the man is to the tree, whatever way that whole assemblage is oriented.

In the terminology employed in this volume, this strategy involves giving the ‘facing’ (orientational) information in absolute coordinates (man facing south), and then giving the ‘standing’ (placement) information in terms of intrinsic coordinates (man confronting tree). The latter gives us the description of a rotatable assemblage of man and tree, the former locks that assemblage in absolute directions.

These two propositions are sufficient to solve the problem – no other photo has a man facing a tree, such that the whole assemblage must be in that hillwards alignment. The matcher goes on to check his understanding: the director has used the positional verb ‘sitting’ in the locative construction – this is anyway the unmarked positional for people, but here it collobrates specifically with the man’s front – and the matcher notes that in fact the figure seems to be standing on something (the base of the model). He goes on to check that the figure is holding the stick in the right hand – this is the intrinsic sense of ‘right’, the figure’s right hand. These were in fact non-essential questions, but then he checks not only that the man is looking hillwards, but that the tree is to the hillwards direction of the man. This effectively checks the inference, available from proposition (1) and (2) above, about the location of the tree with respect to the man in an absolute frame of reference. Thus the matcher is sure he has the right photo.

The same pair of players solved the mirror-image problem, i.e. Picture 2.5, by saying in effect ‘The tree is standing seawards, a man is approaching it’. Here the ‘standing’ information is given in absolute terms, and the ‘facing’ information (indirectly) in intrinsic terms (a man approaching a tree would normally be facing it). Table 5.7 divides in summary form the solutions for the three Pictures 2.3–2.5 produced by three different pairs of players.

What is clear is that the main pattern is for (at least) one absolute statement (mostly for facing information) and one intrinsic statement (mostly for standing information), which are usually jointly sufficient to achieve correct identification. (There were two misidentifications in these nine matches: (1) the R-Y pair in 2.3 made a misidentification on the basis of the purely intrinsic descriptions, but then the absolute proposition was added and this led to correct matching; (2) the A-N pair in 2.5 where a wrong card was picked, the same description was repeated word for word, and the correct card was then chosen.)

<table>
<thead>
<tr>
<th>Picture</th>
<th>Player-Pair</th>
<th>Standing information (Placement)</th>
<th>Facing information (Orientation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>Y-L</td>
<td>Man facing shrub (I)</td>
<td>Man facing hillwards (South) (A)</td>
</tr>
<tr>
<td></td>
<td>A-N</td>
<td>Tree towards X village (West) (A)</td>
<td>Man holding stick seawards (North) (A)</td>
</tr>
<tr>
<td></td>
<td>R-Y</td>
<td>Man approaching tree (I)</td>
<td>Tree tip bends away from man (I)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tree towards Y village (West) (A)</td>
<td>Two branches towards man (I)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Three branches towards Viewer (Deictic)</td>
</tr>
<tr>
<td>2.4</td>
<td>Y-L</td>
<td>Tree at man’s back (I)</td>
<td>Man facing seawards (North) (A)</td>
</tr>
<tr>
<td></td>
<td>A-N</td>
<td>Tree at man’s back (I)</td>
<td>Man holding a stick Eastwards (A)</td>
</tr>
<tr>
<td></td>
<td>R-L</td>
<td>Tree at man’s back (I)</td>
<td>Man looking to East Point (A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Man walking away (I)</td>
<td>Man turned his back on the tree (I)</td>
</tr>
<tr>
<td>2.5</td>
<td>Y-L</td>
<td>Tree standing seawards (North) (A)</td>
<td>Man approaching tree (I)</td>
</tr>
<tr>
<td></td>
<td>A-N</td>
<td>Tree standing front of him (I)</td>
<td>Man holds stick on hillwards side (South) (A)</td>
</tr>
<tr>
<td></td>
<td>R-Y</td>
<td>Man heading towards tree (I)</td>
<td>Man facing East Point (A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Man going in tree direction (I)</td>
<td>Solution guessed early</td>
</tr>
</tbody>
</table>

combination of absolute and intrinsic information seems to fit everyday language usage.

For absolute usage, as mentioned, the following linguistic resources are available:

(a) East–West axis:

Adverbial modifiers

*mada* ‘Up, East’

*p:dd* ‘Down, West’

Verbs

*koko* (remote past *kee*) ‘go up, go East’

*ghif* (remote past *ghif*) ‘go down, go West’

(b) North–South axis:

*niti u kéténi* ‘sea its direction’ i.e. ‘towards the sea’ (North)

*kpapu u kéténi* ‘hills/ridge its direction’ i.e. ‘inland’ (South)

(c) For all directions: Landmarks

PLACE NAME *u kéténi* ‘in the direction of PLACE NAME’

(There is a very dense network of place names, even for uninhabited bush areas, and coral reefs.)

Intrinsic information can be specified by talking about body parts and intrinsic facets of ground objects. Some abstract nominals for ‘fronts’, ‘backs’, ‘left/right
The language of space in Yell Duye

Finally, we come to the relative frame of reference, that is, the use of ‘left’, ‘right’, ‘front’, ‘back’ terms where the orientation is not derived from the intrinsic facets of the ground object (which may have no intrinsic sides, like a tree or ball) but is rather mapped from the viewer’s bodily axes onto the ground object. As already mentioned, this frame of reference is marginal in language use. Even in specialized spatial description tasks, it rarely makes an appearance. Still, relative interpretations of u kωvó ‘(at its) back’, u kada ‘(at) its front’, tːanẽ pee ‘(on) the left side’, wẽnẽ pee ‘(on) the right side’ are possible, at least for some speakers. Taking the front/back terms first, these would seem to have only intrinsic readings with most featured objects (e.g. a truck, where one might equally use terms that can only be intrinsic, like ‘nawo’ ‘point, front’). With unfeatured objects, like a ball or a tree, the relative interpretation is forced. However, the favoured interpretation is the Hausa-style ‘alignment’ reading (Hill 1982), whereby ‘X is in front of Y’ means X is behind Y:

(22) ball cup u kωvó ka tẽo
ball cup its behind TAMP sits
‘The ball is sitting “behind” – i.e. in front of – the cup’

Similarly, in the Farm Animals task, descriptions occurred like ‘The horse is running in front of the tree’ meaning ‘behind’, but with ensuing puzzlement from matchers, suggesting that either the English or Hausa interpretation is in fact possible. These interpretative uncertainties further favour the preference for intrinsic expressions and interpretations, which are usually less ambiguous.

The terms for ‘left’ (tːanẽ) and ‘right’ (wẽnẽ) do not seem to be body parts in the first instance (e.g. terms for left and right hands), but name abstract sides as in English,22 They always occur in collocation with an abstract noun indicating direction, e.g.

tːanẽ pee ‘left side’
tːanẽ u kẽsẽni ‘left its direction’
tːanẽ u kẽ ‘left its hand’ i.e. ‘on the left side’

The structure of these phrases indicates that tːanẽ is a nominal (e.g. nominal modifiers come before heads, adjectives after them). The bare phrases above would normally have a relative interpretation as in:

---

21 Superficial appearances notwithstanding, this system does not seem to be like the English six-sided "box" or arrangement which can be used to assign "top", "bottom", "front", "back", "sides" to objects: the relevant expressions do not form a single contrast set in Yell Duye.

22 Etymologically, tːanẽ also means ‘rock’, and wẽnẽ may be derived from wo (specific form wɔn): ‘life, breath’, so in effect the dead vs. the forceful hand. Otherwise, there is no obvious association with the moral, social and religious oppositions of the kind predicted by the anthropologists Mauss, Heinz and Needham.
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5.5 Deixis
As noted in the introduction, deictic specifications often serve in lieu of frame-of-reference specifications. Deictic specifications are closely aligned of course to relative specifications but do not involve a coordinate system with specification of angle, instead typically giving some kind of radial specification of proximity. For example, in the spatial games like the Men and Tree task, the spatial opposition a mé pee 'my side', mwada pee 'other side (from me, or other reference point) was used quite often.
Rossel has a system of demonstrative adjectives (rather than pronouns) so that one says, e.g., ala spile 'this thing' or ala n:i (this one' where n:i is a pronominal)\(^{23}\) rather than just ala ('this'). The core system could be described, on the basis of functional use in placement tasks, as follows:

<table>
<thead>
<tr>
<th>Proximal</th>
<th>Distal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker-based Addressee-based</td>
<td></td>
</tr>
<tr>
<td>ala</td>
<td>ye</td>
</tr>
<tr>
<td>Unmarked (Medial) k:i</td>
<td></td>
</tr>
</tbody>
</table>

In this series, k:i is clearly the unmarked term on a distance metric, used wherever there might be doubt about the application of the others, while ala and ye require close proximity or preferably even contact with speaker and addressee respectively, and mu indicates contrastive distance ('over there, yonder'). Since k:i picks up the residue from the other three items, it typically has medial uses, but this is pragmatic obviation: k:i is unmarked for distance, and thus less informative than any of the other three terms – by Greek principles (more specifically my Q-principle, Levinson 2000b), if you don't use the more specific forms, you implicate that they are inapplicable. In this respect, k:i is not unlike English 'that'. Additionally, some speakers use mwada – a term that basically means 'the other, the far' – as a 'far distal, yonder' term.

This spatial pattern can be repetitively elicited. But there is a lot more going on in the deictic system, which clearly involves two other dimensions, epistemic certainty and anaphoricity (see Levinson in preparation for the full system). The same items can therefore participate in other, non-spatial, oppositions: (a) mu (as well as some of the other terms) participates also in the anaphoric system, where it contrasts with yi 'this one', meaning e.g. 'the other one'. Here yi is restricted to anaphoric (backwards) reference, but mu can be both cataphoric or anaphoric (further back in discourse) by contrast.

\(^{23}\) N:i is the main relative pronoun, as in a n:vb:=-mu ni:=-yi:=-ya, 'my pig the-one-who ERG killed', i.e. the one who killed my pig.
(b) kl also belongs to another contrast set, which Henderson (1995: 46) suggests is kl ‘in sight’, wu ‘out of sight’. There is definitely something right about this (e.g. if you are shielding a book from my vision, I can’t say kl puka dni ‘That-unmarked book’). However, kl can sometimes be used for things out of sight, e.g. right behind me, and an alternative analysis is that kl marks epistemic ‘certainty’ vs. wu ‘uncertainty’, where visibility is one criterion for certainty.

There are in addition demonstrative adverbs, according to the following paradigm:

**Demonstratives Adverbs**

<table>
<thead>
<tr>
<th>Proximal</th>
<th>ala n:ii</th>
<th>al:ii</th>
<th>‘here’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medial</td>
<td>kl n:ii</td>
<td>kii</td>
<td>‘there’</td>
</tr>
<tr>
<td>Distal</td>
<td>ma n:ii</td>
<td>mw:ii</td>
<td>‘yonder’</td>
</tr>
<tr>
<td>Anaphoric</td>
<td>yi n:ii</td>
<td>yi</td>
<td>‘there as mentioned’</td>
</tr>
</tbody>
</table>

These deictics play a role not only in locative description but also in motion description. The deictic adverbs function as source or goal arguments of motion verbs, while the deictic determiners get incorporated into preverbal inflectional particles, where they play ‘thither’/‘thither’ and evidential functions. But this brings us to the nature of motion description in the language.

5.6 Motion description

We may take as a reference text an extract from a careful telling of the ‘Frog Story’, covering pages 17–22 of the picture-book (see Chapter 1, §1.4.3, for a description of this elicitation tool):

(25) Frog Story extract

Page 17
yi
anaphoric that.boy stone
‘The boy climbed up on the big rock’

Page 18
deer ng: yi
deer ERG anaphoric that.boy stone
take
‘The deer came and took that boy from the top of the rock’

Page 19
deer mbem: Yi
deer on(according anaphoric that.boy DeicProxS
sited/being(s/d)
‘That boy was sitting here on top of the deer’

Page 20
deer ng: yi
deer ERG anaphoric that.boy water/creek/river side PIImmpast3S
ké throw
‘The deer threw that boy (into the river)’

Page 21
e
his dog
got water/creek/river side also MOTION throwing
‘It went and threw his dog also (into the river)’

Page 22
mbwaa
water/creek/river side together PIImmpast3S+Motion
dyimé kni
throwing dualProx
‘It went and threw both of them together (into the river)’

Page 23
yi
his dog anaphoric that.boy his shoulder PIImmpast3S walk/stand
‘His dog got onto the shoulder of that boy’

This simple, short text packs a great deal of spatial information into a minimum of expression. However, a number of preliminaries are necessary before we can understand the text.

5.6.1 Deixis and motion verbs: no ‘Come’ and ‘Go’

A number of the deictic determiners mentioned above can also be incorporated into the preverbal TAMP (tense-aspect-mood-person) marker in complex ways (Henderson 1995: 46–54). Kl and wu then come to have an evidential function (‘certain’ and ‘uncertain, hypothetical, projected’ respectively).24 But ala

24 Contrary to this, Henderson (1995: 49–51) suggests that wu (reduced to w-) has a ‘definite’ meaning, but this does not accord with the fact that it occurs especially in questions and in the future tenses; nor does it accord with its clear ‘uncertainty’ meaning as a nominal modifier.
(in the form a or nê) retains its deictic meaning, 'towards the speaker' or 'close to speaker' and is crucial to the kind of opposition lexicalized in English as come vs. go, bring vs. take, to which we turn shortly. Similarly, ma, the distal deictic, can retain a distal sense (although it may also be used here with a contrastive 'other' meaning, derived from its distal anaphoric uses, as Henderson (1995: 54) notes). Thus we have:
(26) ka kwo 'he is standing (close by)' (from unmarked k+i-TAMP)
mu kwo 'he is standing (over there)' (from distal mu+TAMP)
muda kwo 'he is standing (yonder)' (from 'other, far' mwa+TAMP)

When, as with motion verbs, sources and goals are involved, these deictic oppositions can be of considerable complexity. Take nêd 'leave' when accompanied by a deictic adverb together with deictic incorporated into the TAMP markers:
(27) mw:ii d:a nêd.
there distal 1sImmpastPI+Close left
'I left there hither, i.e. I came here from here'

Here the portmanteau TAMP morph d:a (di- deictic a) incorporates motion towards the deictic centre, and gives us the 'coming' interpretation. If no such deictic is incorporated, as in the following utterance, an 'away from deictic centre' interpretation is by default assumed:
(28) a:ii dê nêd, mw:ii dê lê here 1sImmpast left, there distal 1sImmpast go/come
'I left from here, and I went over there'

The same sentence with the deictic adverb and the 'hither' element in the TAMP particles reverses the trajectory:
(29) mw:ii d:a nêd, a:ii d:a there distal 1sImmpastPI+Close left here 1sImmpastPI+Close go/come
'I left there hither. I went here hither (i.e. from there I left coming, and came over here)'

Rossel has no lexicalized oppositions of the kind expressed in English come vs. go, or bring vs. take. There are verbs that at first sight seem to carry these kinds of meaning, e.g. pwiyê at first looks like a 'come' verb (and Henderson (1995) so glosses it) — it is the verb normally used to summon someone hither:
(30) a pwiyê!
'hither be moving! i.e. come here'

But such uses require collocation with the 'hither' component in the TAMP. Other collocations are possible, e.g. with the associated motion marker to be described below, when a 'thither' interpretation is forced:
(31) Norbert mênê pwiyê knê
Norbert 3s/d/pl/PresCI+MOTION go/come 3sProx(ivPostN)
'Norbert is just going away — i.e. has just left here'

Note that the verb lê (irregular imperative liki), the canonical 'go' verb, can also be used in a summons:
(32) a:ii a liki!
here hither go!
'Come here! (or: Go just over there!)

Thus despite its frequent occurrence in descriptions of movements towards the deictic centre, pwiyê cannot encode any such deictic directional trajectory alone.25

Instead of lexicalizing deictic oppositions, Rossel expresses these oppositions in the preverbal nucleus, as already described. The actual fusions here are complex and irregular, according to tense, aspect and person, yielding hundreds of unpredictable forms. As mentioned, k'i and mu come to have evidential functions, and can then themselves fuse with other deictics like a derived from a:i/a. Likewise, the distal deictic mu may also take on its anaphoric 'other one' interpretation. The preverbal nucleus fuses with these deictics and other modifiers in the following order26 (with full unfused forms given, deictics or ex-deictics in bold):27

(33) Order of preverbal clitics
Epistemic- (Fut)- Addition - Distal - Anaphoric - Repetition - k'i
mye mu yi mê
Negation - TAMP - Motion - Proximal
daa — mÎn/na a/nê wu

25 Pwiyê is in fact a peculiar verb. It is inherently continuous (rather than punctiliar), but is defective in the past tense and takes dual inflection with singular meaning.
26 This slot-and-filler analysis is not in fact adequate, because of some reorderings of the morphemes. See Levinson in preparation.
27 Because mu retains its contrastive anaphoric sense, meaning 'the other place', this now appears to be compatible with movement towards the deictic centre (Henderson 1995: 54). There are some other preverbal forms which I do not fully understand, which also carry deictic specification, for example k'i wêl and mêlê clearly seem to signal movement towards and away from the deictic centre, respectively, in the third person proximate past, continuous aspect, but whether the ye in yeid is related to the addressee-deictic and the mê in mênê to mu 'distal, other', I do not know.
The minimal element a fuses with the tense-aspect-mood-person-number marker as illustrated in the following kind of partially irregular pattern (see Henderson 1995: 51ff., 106–7 for more details):

(34) Fusion of deictic marker in preverbal citive

<table>
<thead>
<tr>
<th>Epistemic Repetition</th>
<th>TAM markers</th>
<th>Fused Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>chi (Punc2aImmpast)</td>
<td>-a</td>
<td>cha</td>
</tr>
<tr>
<td>dpl (Punc12ualImmpast)</td>
<td>-a</td>
<td>dpo</td>
</tr>
<tr>
<td>nlf (Punc1alImmpast)</td>
<td>-a</td>
<td>nlf-né</td>
</tr>
<tr>
<td>a (Contin+Subj/Pres)</td>
<td>-a</td>
<td>wnfé</td>
</tr>
<tr>
<td>a (Punc1-RemFuture)</td>
<td>-a</td>
<td>wa-a</td>
</tr>
<tr>
<td>a (Contin+Subj/Pres)</td>
<td>-a</td>
<td>wnfé</td>
</tr>
<tr>
<td>mé (Punc1aImmpast)</td>
<td>-a</td>
<td>méda</td>
</tr>
</tbody>
</table>

Thus the main burden of deictic specification in the preverbal nucleus is carried by a (or its allomorphs) and its absence: a signals movement towards the speaker’s present location, its absence conversationally implicates movement elsewhere (for justification of this Grecean analysis see Wilkins and Hill (1995).28

In addition, the deictic adverbs mentioned above can be used to specify direction toward (al:ii) or away from deictic centre. Any motion verb can therefore be marked as indicating movement towards/away from the deictic centre, or in absence of that marking, can be presumed to be unspecified. This additional deictic marking normally fits the assigned argument structure of the verb (with regards to source and goal, e.g. a with ké will be interpreted as ‘go to here’, i.e. ‘come’ – issues to be discussed below), although it seems to have rather more freedom of interpretation than lexical arguments.

There are thus in Rossel no verbs incorporating ‘come’/’go’ distinctions, and only one-sided marking of a hither/thither system. The hither or proximal form is used for motion directly toward the deictic centre, regardless of whether the motion reaches that centre, or whether it originates or terminates in a specified location; motion that passes by the deictic centre relatively closely would also normally allow, but not require, the use of the ‘hither’ morpheme. All motion away from the deictic centre does not allow its use, and its absence therefore pragmatically implicates lack of motion towards the deictic centre. However, there is another element fused in the TAMP which can be used to imply a direct thither motion, specifically away from the deictic centre. This is the associated motion element (mé/n:aa) in the post-TAMP slot above, which it the absence of a proximal goal specification implicates motion away from the deictic centre – further discussed below. A system of this kind has not been reported before in the

28 This deictic is not actually a hither marker, since it can occur happily with statements of location, in which case it indicates location close to deictic centre.
the same collocation in other tellings of the story. The prior picture in other
tellings of the story also frequently invokes the motion marker, as in 'the deer
went and stood at the top of the cliff'.

Interestingly (and unlike Arrernte) the motion marker can occur with the most
basic (general) motion verbs, such as **pwi** 'coming'/ 'going', **k** 'going', and
also with slightly more specific verbs like **kee** 'ascend'/ 'enter', as in:

(36) (Picture 17, another telling: R96-V2)

yi télém chépti kpiy ngmé mbémé d:wa

that boy stone big indefinite on PIlImppast3s+Motion

kee

'ascending'

'That boy went and ascended on top of a big stone'

As mentioned above, some uses of the associated motion marker can impli-
cate motion away from deictic centre, presumably because that is so often the
unmarked reference point. Compare for example:

(37) a. ngomo d:uu

house 3s/d/plImppast+Motion enter

'He went-and-entered the house'

b. ngomo da

house 3s/d/plImppast+Proximal enter

'He came-and-entered the house'

c. aya ngomo d:uu

this house 3s/d/plImppast+Motion enter

'He went-and-entered this house, i.e. he came'

d. ngomo dë

house 3s/d/plImppast enter

'He entered the house'

In (a) the motion-away-from-deictic centre is the normal reading in the absence
of other specifications. This contrasts with (b), with fused proximal deictic
asserting motion towards the deictic centre. However, when we add a proxi-
mal deictic to (a), the 'away' interpretation is defeated, as in (c), showing
that the associated motion marker carries no inbuilt deictic specifications. Note
that (b) also contrasts with unmarked (d), where there is no deictic or associ-
ated motion marker: (d) thus suggests not motion towards the deictic centre.
The implicated nature of the opposition between the Proximal marker and
the Motion marker is further shown by the possibility of their co-occurrence.
Thus, in summary, the three-way opposition should be understood as follows:

5.6.3 Spatial distinctions in motion verbs

Yéli Dnye does not fall easily into Tulma’s (1983) typology of ‘verb-framed’
languages (with path-encoding verbs) vs. ‘satellite-framed’ languages (with
manner verbs and path encoded in, e.g., particles). Table 5.8 shows that although
typically the path is partially encoded in the intransitive verb, suggesting a
verb-framed strategy, there is also a rich set of manner verbs, including the
locally important verbs glossing ‘move by pattering’, vs. ‘move by sail’, etc.
(A special curiosity is the verb **m:it**, mentioned above, meaning ‘move in the
characteristic manner for the species’, thus swim of fish, walk of mammals,
fly of birds.) A further problem is that verbs that seem to encode the path,
like **kee** ‘enter’, typically occur with a postpositional phrase too – thus as in
Yucatec, one says in effect ‘enter inside the house’, the PP repeating some of
the information in a way that suggests that the path is not in fact fully specified
in the verb. Moreover, manner verbs (‘run’, ‘walk’, etc.) can be combined with
such path-specifying PPs. Note, however, that place names do not carry a
postposition, so that ambiguity can arise with regard to source or goal unless
the verb-subcategorization encodes this.

The verbs of entering and exiting are worth a special note. First, there is a
curious confusion of **kee** ‘enter’ with ‘ascend’, possibly explained by the fact
that traditional Rossel houses were entered from below by ladder. Thus the verb
has two antonyms, **ghit** ‘descend’ and **pwi** ‘exit’. In addition, **kee** can mean ‘go
east’ (probably through association with the prevailing ‘upwind’ direction), and
**ghit** can mean ‘go west’ (through association with the ‘downwind’ direction; this
seems to be an areal feature throughout the Louisiades). Second, as mentioned,
both ‘enter’ and ‘exit’ verbs collocate with the ‘inside’ postposition:

(38) ngomo k:oo da

house inside 3sImppast+Deic enter/exit

'He entered/exited the house'

As a result, the following sentences could both have the same meaning:

(39) ti:le pi mgi k:oo këdë

snake hole(a) ia/inside CERT+3s/plImppast descend

'The snake just went (descended) into the hole'
Table 5.8 Sample of intransitive motion verbs (transitive counterparts in brackets)

<table>
<thead>
<tr>
<th>Path-encoding verbs</th>
<th>Manner-encoding verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>kee ‘enter’, ‘ascend’, ‘go east’</td>
<td>m:ii ‘move in characteristic manner of species’</td>
</tr>
<tr>
<td>pwii ‘exit’</td>
<td>mbepu ‘run’</td>
</tr>
<tr>
<td>gdii ‘descend, go west’</td>
<td>gdi ‘run around’</td>
</tr>
<tr>
<td>li ‘cross over’</td>
<td>pau ‘walk’</td>
</tr>
<tr>
<td>li ‘go from’</td>
<td>mgene ‘walk around’</td>
</tr>
<tr>
<td>ndi ‘leave from’</td>
<td>paamboi ‘walk aimlessly, ‘wander’</td>
</tr>
<tr>
<td>yem ‘start off from’</td>
<td>chiid ‘swim’</td>
</tr>
<tr>
<td>dyi ‘go and return from’</td>
<td>gywali ‘by away’</td>
</tr>
<tr>
<td>pwiiy ‘move off from’</td>
<td>tpyi ‘‘sail’ (kidi, TV, ‘sail a canoe’)’</td>
</tr>
<tr>
<td>mnue ‘punt’ (mbimi, TV, ‘punt a canoe’)</td>
<td>mbe ‘arrive by boat/canoe’</td>
</tr>
</tbody>
</table>

(40) tple,puu menë jëdd kee
snake hole in/inside CERT+3s/plImppast enter/ascend
‘The snake just went (entered/ascended) into the hole’

Such ambiguities can be resolved by use of the incorporated deictics. Thus the most prominent meaning of a sentence like the following is unexpected:

(41) pyaa ntti u menë dpo kee
crocodile sea its inside Punct.3sHab.+Close enter/ascend
‘The crocodile (habitually) comes hither out of the water’

The reading is forced by the incorporated deictic (‘Close’) in the preverbal particle dpo; with the +Motion marker incorporated instead, as the particle dpo,pu, the reading ‘the crocodile goes into the sea’ is now forced instead.

There is one crucial feature of all the motion verbs in Rosso. As mentioned, locatives typically take zero-marking, and there is thus no way to distinguish source and goal (phrase order being free). Notice that even if they are marked with a postposition indicating, e.g., ‘inside’ as in the examples above, this does not disambiguate between source and goal interpretations. Consequently, the coding of source vs. goal has to be in the verb itself – verbs tend to subcategorize for (or at least coordinate with) a single source or goal nominal (a strategy in line with the tendency, mentioned in the introduction, for this language to lexicalize rather than derive or syntactically mark distinctions). A further consequence of this is that full path-specifications with both source and goal typically require more than one clause. Thus in the following, gdii in the sense of ‘go west’ (as opposed to ‘go down’) does not colloquially here take a goal specification, and so requires an additional ‘go’ verb to allow the goal to be specified.

---

Table 5.9 Verb subcategorization for source or goal

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
<th>Goal-spec</th>
<th>Source-spec</th>
</tr>
</thead>
<tbody>
<tr>
<td>lihi</td>
<td>‘go’</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ndé</td>
<td>‘leave’</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>yem</td>
<td>‘start off from’</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>kee</td>
<td>‘head east’</td>
<td>(+)</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>‘ascend’, ‘enter’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gdií</td>
<td>‘head west’</td>
<td>(+)</td>
<td>+</td>
</tr>
<tr>
<td>pwii</td>
<td>‘ascend’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dyi</td>
<td>‘ascend’</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>pwii</td>
<td>‘move off (from)’</td>
<td>(+)</td>
<td>+</td>
</tr>
</tbody>
</table>

* I have used the term ‘subcategorize’ for instant recognition of the idea that the verb is encoding the way in which the locative NP is to be understood as source or goal. However, there is reason to believe that what is coded in a preferential interpretation rather than a necessary one. For example, kee ‘enter/ascend’ normally requires a goal interpretation, but as we have just seen in the crocodile example, an ‘ascend out of’ interpretation can be forced by a deictic. Whether this flexibility of interpretation at the margins should be understood as ‘corection’ during the unification of meaning, or as betraying an ultimately pragmatic source of the source/goal inference, is a matter unsolvable here. Plus-signs in brackets indicate what seem to be weaker preferences.

2 The use of these verbs in the absolute frame of reference, namely gdií ‘go down west’, and kee ‘go up/east’, normally collocate with neither goal nor source specification, but nevertheless can take goal specifications.

(42) Mathew jëdd Wall
Mathew CERT-Imppast3s descend+ProxPast+Punct Wall-Island
dé li
Imppast3s go(ProxPast+Punct)
‘Mathew has just descended i.e. gone-West, he’s gone to Wall Island’

The motion verbs illustrated in the Table 5.8 above thus come with rather precise expectations of whether they take a goal or source or location NP, as illustrated in Table 5.9 (I provide only the punctiliar immediate past root, although many of them have a large number of distinct roots).

The ‘return’ verb dyi requires a special note, because there are two trajectories: (1) outbound, i.e. source → outbound goal, (2) inbound, i.e. source → inbound goal, where what is goal on the first trajectory becomes source on the next, and vice versa. The verb seems normally to take
specification of the outbound goal, coincident with the inbound source, with
the deictic centre as default inbound goal:

\[ (43) \]

\[
\text{Nimowa w-a \text{diyé} inowa EPIST-FUT return Deictic centre Nimowa} \]

\text{‘He'll perhaps go to Nimowa and come back’}

But the outbound path can be independently specified, in which case a locative
NP will be understood as the inbound goal of diyé:

\[ (44) \]

\[
\text{Sudest dé lë, Nimowa a \text{medé diyé} SudeInImpast3s go, Nimowa Future Again+PunctProx3 return} \]

\text{‘He went to Sudest, he will go back to Nimowa again’}

\[
\text{Deictic Centre} \quad \text{Sudest} \quad \text{Nimowa} \]

\text{OUTBOUND} \quad \text{INBOUND}

Returning to our snippet of Frog Story, notice how goal and source of motion
are largely determined by the argument structure of the verb. Thus, in the
description of page 17, we have the verb kee ‘ascend to’, which expects a goal,
here indicated by the PP ‘on the big rock’ – the sentence could not mean ‘ascend
from the big rock’. Similarly, the verbs of throwing expect a goal, and can thus
in the description of page 20 take a plain NP ‘water side, i.e. river’, which
will be interpreted as the place thrown to. Last, the description of page 23 has
the verb gëh, which with the punctiliar aspect has the sense ‘moved to’, expecting
a goal, here given by the NP ‘the boy’s shoulder’. Notice that in none of these
there is any allative marker – such a marker occurs only where the goal is a person
(when the ‘dative’ postposition ka is used). Thus in Yëll Dnye, not only do we
have a ‘verb-framing’ pattern in Talmy’s (1983) sense of directional marking
being lexicalized inside the verb, but in a typologically unusual pattern even
source/goal marking is absorbed largely within the verb.

\text{5.6.4 Overall observations on motion description}

Focussing again on the brief extract from a telling of the Frog Story, we can
now show how these various ingredients help us to understand the construction of
narrative space – that is, a spatial model for events. Because motion verbs
tend to build in both a path and an expectation of the specification of either
source or goal, they severely restrict the interpretation of NPs co-occurring
with them. Postpositions, which together with positional verbs are so important
in static descriptions, here merely serve to indicate that goal and source are
subparts of the locations given by the nouns. The rich set of postpositions

\text{used in the description of static locations dwindles to a mere handful that co-
occur with motion verbs. Particles and elements in the TAMP give small, but
important, additional information. Thus the associated motion marker serves to
indicate that motion precedes or co-occurs with an action, while specification
for deictic centre helps to establish one protagonist as the person from whose
perspective events are told. The text is repeated here, with a diagrammatic
annotation that should help to make clear the contribution of specific formal
elements to the construction of a coherent narrative space. Overall we infer the
following trajectory information:

\[ (45) \]

\[
\begin{array}{c}
\text{Page 17} \quad \text{‘ascend-to + top’} \\
\text{‘take-from + summit’} \\
\text{Page 18} \\
\text{‘basic locative construction: ‘sitting + on’} \\
\text{Page 20} \\
\end{array}
\]

\[
\begin{array}{c}
\text{Deictic camera angle} \quad \text{‘came and’} \\
\end{array}
\]

\[
\begin{array}{c}
\text{Deictic ProxS} \quad \text{sitting(being(s/d)} \\
\text{Page 20} \\
\end{array}
\]

\[
\begin{array}{c}
\text{Deictic ProxS} \quad \text{sitting(being(s/d)} \\
\text{Page 20} \\
\end{array}
\]
This series looks at the role of language in human cognition – language in both its universal, psychological aspects and its variable, cultural aspects. Studies will focus on the relation between semantic and conceptual categories and processes, especially as these are illuminated by cross-linguistic and cross-cultural studies, the study of language acquisition and conceptual development, and the study of the relation of speech production and comprehension to other kinds of behavior in social context. Books come principally, though not exclusively, from research associated with the Max Planck Institute for Psycholinguistics in Nijmegen, and in particular the Language and Cognition Group.

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