11 Lexical fields

The structural properties of the grammar of a language, as catalogued in the main body of this book, give but the faintest idea of how a language is used, or indeed how the vast bulk of it – namely the lexicon – is structured. Here just a few semantic domains are reviewed, which will give some idea about how interesting the lexical organization of this language is. Cutting and breaking verbs provide an interesting example of the way in which Yélî Dnye cuts up semantic domains in an unfamiliar way, against the cross-linguistic generalizations. Lexical organization interacts with the grammar of course: for example, the small set of positional verbs handle locational and existential statements but also serve as a template for other lexical sets, like the verbs of putting and taking reviewed here. These underlying templates – or semplates as we have called them (Levinson & Burenhult 2009) – are major structuring principles in the organization of the lexicon. The landscape semplates, also reviewed here, are another case in point: the same contrastive oppositions show up in lexical set after set, despite unrelated forms. Thus the same underlying semantic axes serve to structure the naming of directions, the naming of topography and the major verbs of motion; they offer critical keys to the way the whole language is structured. Place names have the additional property that they are the longest words in the language, offering rare phonotactic structures.

Another kind of connection to grammar is provided by the kinship terminology – kin terms are predicates, with their own recursive algebraic expressions, a mini-grammar in effect, and the Rossel kin terminology is one of the most complex attested in the Pacific.

11.1 Verbs of 'cutting' and 'breaking'

We turn to a first domain to illustrate the way that Yélî Dnye lexical organization often deviates from universal claims and cross-linguistic expectations. The Yélî Dnye verbs covering the 'cutting' and 'breaking' domain do not divide it in the cross-linguistically expectable way with verbs focusing on special instruments and manners of action on the one hand, and verbs focusing on the resultant state on the other hand (Levin 1993; Majid & Bowerman 2007). Instead, just three transitive verbs and their intransitive counterparts cover most of the domain, and they are all based on 'exotic' distinctions in mode of severance – coherent severance with the grain vs. against the grain, and incoherent severance (regardless of grain). For the full ramifications of this system see Levinson (2007a).

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The relevant semantic domain can be thought of as "caused division", where an agent causes an object (the theme) to lose its integrity (wholeness), with or without the use of a tool or instrument. An expectation has been that most languages will have a set of 'basic' verbs that together exhaustively cover this domain at a general level, supplemented with more detailed verbs which describe subtypes of these actions (cf. general *break* vs. specific *crush*, general *cut* vs. specific *cleave*). Moreover 'break'-type verbs (incoherent separation) might be expected to contrast with 'cut'-type verbs (controlled and localized separation) in their argument structure and the alternations they undergo (Levin 1993). The core verbs can be operationally defined as those occurring in responses to specific video clips ("Cut and Break Clips", Bohnemeyer et al. 2001). Most Yélî Dnye verbs come in doublets, transitive and intransitive, but here (Tables 11.1 to 11.3) one of the focal verbs does not. There are thus five focal verbs, or 2.5 doublets, as follows (glosses approximate – see below):

Table 11.1: Transitive verb with Intransitive counterpart: 'break'.

"break something" (Transitive)	**"break" (Intransitive)**
Tense/Aspect/Mood Root	**Tense/Aspect/Mood Root**
TV citation form *pwââ*	IV citation form *pwópu*
Punct. imperative ***pwaa*** *ngi*	Punct. imperative *pwédi!*
Punct. prox.past *pwââ/ puwâ*	Punct. prox.past *pwópu*
Punct. rem.past *pwââ/ puwâ*	Punct. rem.past ***pwaa*** *wo*
Followed ***pwaa*** *wo*	Followed ***pwaa*** *wo*
Continuous *pwaapî*	Continuous *pwópupwópu*

Table 11.2: Transitive verb with Intransitive counterpart: 'sever along the grain: split, tear'.

"split something" (Transitive)	**"split" (Intransitive)**
Tense/Aspect/Mood Root	**Tense/Aspect/Mood Root**
TV citation form *chaa*	IV citation form *chópu*
Punct. imperative *chaa ngi*	Punct. imperative *chépi!*
Punct. prox.past *chaa*	Punct. prox.past *chapî/chaa*
Punct. rem.past *chópu*	Punct. rem.past *chópu*
Followed *(n.a.)*	Followed *(n.a.)*
Continuous *chapî*	Continuous *chópuchópu*

Table 11.3: Transitive verb: 'sever across the grain: cut, chop, sunder'.

"cut something" (Transitive)	
Tense/Aspect/Mood	**Root**
TV citation form	*châpwo*
Punct. imperative	*chepwe*
Punct. prox.past	*châpwo*
Punct. rem.past	*châpwo*
Followed	*(n.a.)*
Continuous	*châpwo*

11.1.1 The semantics of the core verbs

Some of the Yélî Dnye verbs are unusual viewed against the general solution emerging from comparative work (see Majid & Bowerman 2007). First, no distinction is made between "snapping" and "smashing" events, in contrast to most languages. Second, the verb *chaa* is used both for tearing events and cutting events of a specific sort, e.g. longitudinal splitting of a carrot with a knife. This is a clue, if it was needed, that these verbs represent an unusual categorization of this domain. For strictly speaking there is no "cutting" verb in the language! The way the language semantically divides the domain seems to be as follows, with the subtypes for each of the three transitive verbs subsumed within the indicated general notion (CAPS), and thus not recognized as different senses:

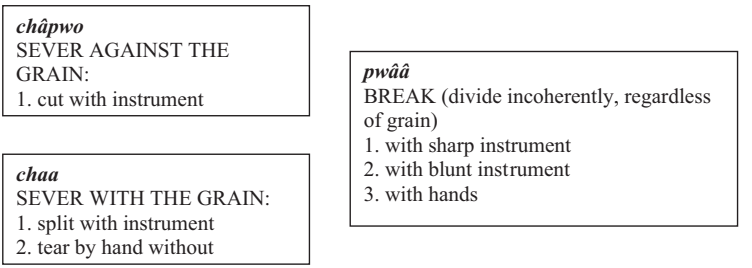

Figure 11.1: Intensions of the main verbs of "cutting and breaking".

The crucial underlying semantic parameter appears to be the notion of 'grain', more exactly fibres. Materials which are built of aligned fibres (wood, leaves, vines, cloth, etc.) have the property that they are severable in very different ways 'with the grain' (along the fibres), or 'against the grain' (across the fibres). These materials in turn differ from those without 'grain', i.e. not built from fibres, which can easily break incoherently in any direction – fibrous materials can also break incoherently under extreme compression or torsion. These underlying distinctions in folk 'materials science' seem to underlie the distinction between the three transitive verbs: on the one hand, wood can undergo *chaa*, splitting along the grain, or *châpwo*, severing across the grain, or *pwââ*, cracking both along and across the grain, but on the other hand, cloth will tend to *chaa*, tear or split, and pottery to *pwââ*, break into irregular pieces.

All three distinctions are concerned primarily with the state change caused in the theme (the affected object), not with the type of activity that produces it. In a sense, they are semantically all 'break'-like verbs, caring primarily for how the theme breaks: along the grain, across the grain or less systematically. Alternatively one could think about them as 3 DIVIDE verbs: 'divide coherently into two along the grain' vs. 'divide coherently across the grain', vs. 'divide incoherently'. This three-way distinction recognizes no special role for an instrument of any kind, let alone making distinctions between say axes, saws and knives. Note especially in Figure 11.1 how with the verb *chaa* 'tearing' scenes fall into the same category as scenes depicting lengthwise division with a knife.

Further evidence for the importance of these semantic parameters can be found beyond the core basic set of Yélî Dnye verbs. Thus *châpwo* means 'sever across the grain', and the causative *châpwo kwolo* is formed by embedding the gerund as the theme argument of the causative verb *kwolo* – this has the specialized meaning 'sever crosswise into many pieces'. It contrasts with another causative form *pepe kwolo* which means 'sever longitudinally into many pieces' (there is no synchronic independent meaning to *pepe*).

This three-way semantic distinction clearly cuts across any 'cutting/breaking' division of the domain. It is an entirely different way to divide such events. Why would the inhabitants of Rossel choose such a system? Probably because the language reflects the culture of a century ago, when there were no metal tools, and the only substantial tools were relatively blunt stone axes ground from basalt. With such simple tools, the bush materials from which Rossels construct canoes and houses could only be made with difficulty. Cutting across the grain was especially problematic, and wherever possible timber, vines and fibres were divided along the grain: it is still a material culture of split fibres – floor boards, baskets, mats, thatch, planked canoes, ropes, grass skirts, all involve split materials. The Yélî Dnye semantics serves as a useful reminder that 'universal' tendencies in

semantics are perhaps just as likely to reflect cultural tendencies as any nativist constraints.

Whereas the English vocabulary of 'cutting' and 'breaking' is greatly expanded through distinctions between instruments used (*cut*, *saw*, *chop, scythe*), the manner employed (*hack, hew, slash, gash*) or both (*cleave, stab, lop*), Yélî makes no distinctions according to instrument – to code the instrument an NP in Instrumental case is employed, and all three transitive verbs collocate happily with an NP meaning, for example, 'with the knife', 'with the hammer', although speakers as often as not feel it unnecessary to encode the instrument. Yélî Dnye is also oblivious, as it were, to manner distinctions. In the stimuli, a number of scenes would have natural English descriptions of the kind *hack*, *smash* or *shatter*, where the verbs encode manner distinctions, but these pass without comment on manner in Yélî Dnye. Only under prompting could one extract the adverbial *dpodo mbiy:e* 'with effort', or the construction *yeda pwââ ala pwââ* 'keep on breaking'. A parallel could here be drawn to the well known 'satellite-framing' vs. 'verb-framing' distinction in motion semantics (Talmy 2000), where only the former (as in Germanic languages like English) permit merging of manner information with the main verb.

11.2 Verbs of 'putting' and 'taking'

The best way to do cross-linguistic comparison of a domain is to use the same stimulus materials across the languages to ensure that we have extensional equivalence, as used in the previous study of cutting and breaking. The remarks in this section are based on scenes of putting and taking, as in the video stimulus materials developed by the Event Representation project at the Max Planck Institute (Levinson & Brown 2012; Bowerman et al. 2004). Before the application of these materials, my understanding of the relevant verbs in Yélî Dnye was in fact entirely mistaken. For it turns out that there is an underlying key to the system, which had completely escaped me.

11.2.1 Underlying positional semplate

The key is a covert system of nominal classification by verbs. As we've seen, Yélî Dnye employs a set of positional verbs for all static descriptions and existential statements. This classifies entities three ways, whether material or immaterial, according to whether they take the 'standing', 'hanging' or 'sitting' positional verb, repeated here (Table 11.4) for convenience.

Table 11.4: Positional Verbs (with inherently continuous aspect).

		'sit/lie'	'stand'	'hang'
Indicative, Proximal tense	**Sing/Dual**	*tóó*	*kwo*	*t:a*
	Plural	*pyede*	*wee*	*t:a*
Non-Indicative, or non-proximal tense	**Sing/Dual/ Pl**	*ya*	*kwo*	*t:a*

The assignment of nominal concepts to positional verbs turns out to be absolutely crucial for deciding which PUT or TAKE verb to use, for to each of the positional verb categories ('sit', 'stand', 'hang') there is a corresponding specialized PUT verb and a specialized TAKE verb. Or to put it another way, the 6 main PUT and TAKE verbs are strictly subcategorized following the same categories as used for the three stative positional verbs. Thus if an object "stands", it is "put(standing)", and "taken(standing)", although there is no superficial (morphological or lexical) relation between the three verbs – it is only a shared semantic category (Levinson & Brown 2011). To make this clear, consider:

(569) **Scene 32**

kaapî	*tapil*	*mbêmê*	*ka*	*kwo,*	*pyópu*	*ngê*	*da*
cup	table	on	is	standing	girl	ERG	3past.perf.
y:oo							
take.standing							

'The cup was standing on the table, a woman took it'

Here, since one uses the stative positional "stand" for any object with a base or vertical long axis (see Levinson 1999), the TAKE verb must be the corresponding 'take-standing' verb *y:oo,* "take (of standing object"). Nothing else will do. In general, usage seems very consistent with this rule: use the TAKE or PUT verb that corresponds to the positional that would have been employed. The responses to some of the stimulus films in the PUT & TAKE series illustrate this perfectly:

(570) **Scene 10 (v3)**

kwodo	*mê*	*ka*	*kwo,*	*mbêmê*	*yi*	*'ne'ne*	*ngma*
maiden	REP	is	standing	on.head	tree	flower	INDF
a	*kwo,*						
is	standing						

'Again a girl is standing, a tree flower is standing on her head'

pyââ	*ngmê*	*ngê*	*kada*	*y:oo*
woman	INDF	ERG	CERT.3PRS.CI.Close	take.standing.thing

'A woman takes.standing.thing (removes the flower)'

kê *ma* *kââ*
CERT.3. REP put.standing.thing
'She stood it back again (stuck it back again)'

Note that a flower is held to *kwo* 'stand' when inserted in hair, and so the corresponding TAKE verb is *y:oo* 'take (a standing thing)', and the corresponding PUT verb is *kââ* 'put (a standing thing), stand a thing up' (Table 11.5).

The following example illustrates the use of the 'take (of hanging thing)' verb. The 'hang' positional verb basically applies to any attached or tied-on object unless it projects stiffly from a ground object – thus socks are said to 'hang' (*t:a*) on feet, and consequently one takes them off with the verb for 'take a hanging thing' (*ngee*):

(571) *kî* *pini* *ngê* *yuwo* *soksi* *dê* *a* *t:a*
This man TOPIC lower.leg.LOC socks Dual 3PRSCI hanging
mo,
dS.intrans
'This man has two socks hanging on his lower legs,
kpââlî *woni* *yi* *mbêmê* *dê* *yé,*
upper.leg the.one lower.leg on.top 3IMM put.sitting
he put(sitting) one upper leg on a lower one,
socksi *da* *ngee,* *woni* *da* *kuwo*
sock 3IMM.CLS take.hanging the.one 3IMM.CLS left
he took.hanging a sock off, the other he left on'

If we also take into account the corresponding internally caused verbs ("make oneself stand up", etc.), each semantic category ('sitting', 'standing', 'hanging') has a tetrad of verbs, as in Table 11.5:

Table 11.5: Correspondence between positional verbs and verbs of PUT and TAKE.

Stative Positionals (intransitive)	PUT Causative (transitive)	TAKE Undo Causative (transitive) +CLOSE	Active (intransitive)
kwo 'be standing'	*kââ* 'stand something up'	*y:oo* 'take something which stands'	*ghê* 'stand up'
tóó 'be sitting'	*yé* 'put something down'	*ngî* 'take something which sits'	*yââ* 'sit down'
t:a 'be hanging'	*t:oo* 'hang something up'	*ngee* 'take something which hangs'	*kaalî* 'make oneself hang' (e.g. flying fox)

This kind of implicit structure in the lexicon we have dubbed a semantic template or 'semplate' (Levinson & Burenhult 2009). Note that (a) these PUT and TAKE verbs are at the highest general descriptive level – more detailed ones also exist, but one cannot find more general verbs and (b) usually only one is applicable. An additional curiosity of the 'take' verbs is that they all obligatorily require the grammatical category +CLOSE (CLS), a portmanteau form of the preverbal inflection that typically indicates motion towards the deictic centre (§6.1.3.1). This helps to distinguish them from their homonyms, and makes sense as a narrative shift of the deictic centre to the subject's point of view.

So far, the verbs have been given in their citation form. However, most verbs in the language have two or three suppletive forms, depending on such factors as tense, aspect and whether or not there is a following inflectional enclitic. The main suppletive parts for the PUT and TAKE verbs are shown in Table 11.6. Note that these are mostly tense and aspect suppletions ('followed root' suppletions occur where there is a following inflectional enclitic, mostly triggered by dual/plural subjects), although imperative suppletions are not shown here:

Table 11.6: Suppletive parts of the three major PUT and three major TAKE verbs.

PUT verbs and their parts				
PUT	**Proximal tenses**	**Followed root (or same as Proximal)**	**Remote Past**	**Continuous aspect**
kââ 'put (standing)'	*kââ*	*kaa*	*kââ*	*kapî*
yé 'put (sitting)'	*yé*	*(yé)*	*yó*	*yiyé*
t:oo 'put (hanging)'	*t:oo*	*t:ee*	*tângo*	*teemî*

TAKE verbs and their parts				
TAKE	**Proximal tenses**	**Followed root (or same as Proximal)**	**Remote Past**	**Continuous aspect**
y:oo 'take (standing)'	*y:oo*	*y:ee*	*yângo*	*yémî*
ngî 'take (sitting)'	*ngî*	(*ngî*)	*ngódu/ngêêdî*	*ngêênî*
ngee 'take (hanging)'	*ngee*	(*ngee*)	*ngópu*	*ngêêpî*

These six verbs of putting and taking, which distinguish whether the object placed or removed canonically 'sits', 'stands' or 'hangs', are the unmarked verbs of PUTTING and TAKING – there is no verb that is semantically general over these distinctions which at the same time has anything like the same generality of application. But there are more specialized verbs of PUTTING and TAKING, with glosses like 'stuff in', 'pull out', 'stick body part in', 'attach, stick', 'unstick', etc., which ignore the canonical collocations with positional verbs but instead make different semantic

distinctions. In general, these verbs have application when the object to be placed or removed is not static in its location simply by force of gravity, but is rather held in place by other forces (e.g. by pressure or adhesion). Thus if the object transferred will freely "sit", "stand" or "hang" when in the container, then the relevant PUT or TAKE verbs (as above) can be used. But if not, then other verbs are relevant. Altogether, another ten verbs or so were used in responses to the stimulus set.

11.2.2 Additional 'putting' and 'taking' verbs

These additional verbs involve such semantic parameters as 'tight fit', 'attach to', or 'immerse, bury', or they may involve e.g. special kinds of figure or theme (the object placed or removed). Like the main PUT&TAKE verbs, these verbs often seem to come in doublets, with equal specificity for goal-oriented and source-oriented verbal concepts. Those verbs used to describe the stimulus set included the following:

(A) TIGHT FIT verbs. One important pair of verbs is:
knî – insert, stuff in, push in
pêêdî – extract, pull out

These presuppose "tight fit" (i.e. figure is held in ground by pressure), and will be used for putting e.g. knife into sheath, rag into hole, etc. These conditions seem to pre-empt the use of the six main PUT/TAKE verbs, i.e. one doesn't seem to be able to use a more general verb in these situations.

(B) ADHESION is another semantic parameter of importance. The language has special adpositions of adhesion (e.g. *p:uu* 'stuck on', *'nedê* 'stuck on by spiking', etc.). The relevant matching verbs here are:
d:ii/dyîngo, dimi – to attach, put on (of e.g. paint, plaster)
pywalî – to remove an attached thing

So one could say:

(572) *Yidika ngê ngomo p:uu dumo dyîngo, awêde*
Yidika ERG house attached.to wall attached today
da pywalî
3IMMPI.CLS unattach
'Yidika attached the wall to the house (some time ago), now he's unattaching (removing) it'

(C) FIGURE or GROUND SPECIFICITY. Special 'figures' or 'grounds' motivate other special verbs, including:
kwolo 'put animate thing in' (e.g. pig inside pen), or 'put body part inside' (the converse here is the more general *pêêdî* 'pull out')
pudo 'put body part inside enclosed space' (e.g. hand or foot in hole)
kmênê 'put something in water or soil, i.e. immerse, bury'
ché 'put in container (basket, pot, canoe) and leave there'

The last of these verbs (*ché*) is an important PUT IN verb, but it is quite specialized and could not be used e.g. to describe the insertion of a stick in a hole (not a container) nor a hand in a bucket (since the hand would have to be severed to meet the condition that the theme be left in the place described). For the latter case, *pudo* is the specialized verb, used especially to describe e.g. putting one's hand under coral to look for shell fish. The verb *kwolo* is specialized to putting animate things (including hands, heads, etc.) into enclosures – e.g. putting a pig inside its fence or a chicken in a coop, although in response to the stimulus set it was also used for putting hands into holes.

Some details of these additional PUT IN/TAKE OUT verbs follow (Table 11.7):

Table 11.7: Some more specialized PUT and TAKE verbs.

	PUT IN			
	Prox	**Follow**	**Rempast**	**CI**
ché 'put in and leave'	*ché*		*châng o*	*ch:em*
kwolo 'put animate in, etc.'	*kwolo*	*kalê*	*kwólu*	*kîgha*
knî 'stuff in', 'put up (of hands)', 'put in boat'	*knî*	*km:êê*	*kmungo*	*kmîmî*
pudo 'put body part in hole'	*pudo/pódu*	_	_	*pudopudo/pwede*
kmîmî 'stuff in'				
kmênê 'put in water, bury'				
myw:êênî 'push'	*myw:êênî*	_	*myw:êênî*	*myw:êênî myw:êênî*

	TAKE OUT			
	Prox	**Follow**	**Rempast**	**CI**
pêêdî 'pull' +CLOSE	*pêêdî*	–	*pêêdî*	*peede/paapaa*
pw:ii 'cause to exit'	*pw:ii*	_	*pw:ii*	*pw:iipw:ii*
mbyw:o 'pull out' +CLOSE	*mbyw:o*	*mbyw:ee*	*mbyongo*	*mbwyêmî*

11.2.3 Notes on the argument structure and syntax of the core PUT and TAKE verbs

The syntactic properties of the three verbs belonging to each class, the PUT verbs and the TAKE verbs (six altogether), appear to be identical. They are all canonical transitive verbs with overt subjects in the ergative case and overt objects in the absolutive case. But the PUT verbs subcategorize for a locative GOAL (the place in which the thing is put), while the TAKE verbs subcategorize for a locative SOURCE (the place from which the thing is taken). As we have seen, location is indicated by a rich series of locative postpositions, but there is no ablative/locative marking for motion, so GOAL and SOURCE are distinguished only by the collocating verb:

(573) a. *pyââ ngê d:ââ k:oo mbywuu kêdê yé*
woman ERG pot inside flesh CERT3IMMPI put.sitting
'The woman put(sitting) the flesh inside the pot'

b. *pyââ ngê d:ââ k:oo mbywuu kada ngî*
woman ERG pot inside flesh CERT3IMMPI.CLS take.sitting
'The woman took(sitting) the flesh (from) inside the pot'

The two sentences are parallel in their structure with the same agentive ergative NP *pyââ ngê* 'the woman', and the same patient absolutive NP *mbywuu* 'flesh, meat' (absolutives are unmarked). Note too that examples (573)a. (PUT) and (573) b. (TAKE) have the identical noun phrase, *d:ââ k:oo* 'inside the pot', indicating the Ground – given a PUT verb this must be interpreted as GOAL, and given a TAKE verb as SOURCE. Like English *put*, these verbs thus subcategorize for a locative NP – they are three-argument verbs. Unlike English, all these NPs are optionally expressed. Ergative and absolutive NPs are cross-referenced on the verb – in (573) the ergative in the PUT sentence is cross-referenced by the preverbal clitic *kêdê*, and in the TAKE sentence by its variant *kada* encoding deictic 'hither' (an obligatory feature of TAKE verbs). The patient is cross-referenced by a null enclitic, coding proximal tense, singular agent and singular object. The Ground (Source/Goal) NP has no cross-referencing, but can equally be omitted.

This pattern whereby SOURCE or GOAL is indicated by the choice of verb, which subcategorizes for one or the other, is entirely general in the language (as mentioned in §2.4.5, §7.2.2.3). Verbs of motion, whether intransitive as in *lê* 'go', or transitive as in *ghîpî* 'carry down a slope', subcategorize for, in these cases, a GOAL, and in others a SOURCE.

It follows from these subcategorization facts, together with the unmarked nature of SOURCE/GOAL NPs, that it is impossible to construct a single clause

which specifies both SOURCE and GOAL for a single motion event. For example, for a stimulus clip in which a woman takes an apple from on top of a pile of books and moves it to on top of a boot, the shortest possible description was:

(574)

kî	*pyópu*	*ngê*	*yi*	*kigha*	*puku dmi*	*dyuu*	*mbêmê*
that	woman	ERG	that	fruit	book	pile	on
da	*ngî,*	*boot*	*mbêmê*	*dê*	*yé*		
3IMMPI.CLS	took.sitting	boot	on	3IMMPI	put.sitting		

'The woman took(sitting) the fruit from the book pile and put(sitting) it on the boot'

The core Yélî Dnye PUT and TAKE verbs are of some interest for the following reasons:

(i) They indicate that the three-way classification of nominal concepts forced by the positional verbs is a thorough-going underlying semantic template which shows up in other domains, like PUT & TAKE verbs. Such systematic verbal classification of nominal concepts is unusual (but see Hellwig 2007 for a parallel case).

(ii) The six main verbs are unusual in exhibiting an exact symmetry, with 3 distinctions each in the PUT vs. TAKE subdomains – most languages display more subdivisions in the PUT subdomain than the TAKE one.

(iii) The systematic nature of the oppositions indicates that PUT & TAKE forms a coherent domain or semantic field in this language, which may be less evident in other languages.

(iv) The argument structure of these verbs specifies three arguments for each: an agent, a patient and a SOURCE or GOAL argument. Case is assigned as follows: ergative to agent, absolutive to patient, and unmarked oblique to the SOURCE or GOAL ground argument, which may take a (static) locative postposition within its scope (so the whole may be understood as, e.g., 'from inside the house'). The verb itself assigns SOURCE vs. GOAL to the ground argument. A clause can thus only have either a SOURCE or a GOAL NP, but not both.

(v) There are no more general verbs for PUT or TAKE, but there are more specific ones. Some of these also come in PUT vs. TAKE doublets (e.g. 'stuff in' vs. 'pull out'). The specific constraints encoded include force-dynamics and specific properties of the patient (as in 'put body part in') or goal (as in 'put in water', 'put in canoe').

11.3 Landscape terms, semplates for motion and toponyms

We have seen that culture-specific concepts can structure lexical domains, with grammatical implications. We now turn to another domain, where the cultural conceptualization has deep ramifications across many lexical sets and across parts of speech. Rossel Island has a mountainous terrain criss-crossed only by steep and rocky paths; all movement is by foot or by canoe around the coast. Once again there is an immanent semantic structure underlying lexical oppositions, arguing against the linguistic tendency to think of the lexicon as an unordered repository of words. Such implicit structures are likely to be especially prominent where peoples have occupied the same ecology for eons. The semantic template ('semplate') relevant here makes, on a first pass, a three-way opposition between UP/OVER/DOWN, which structures three different verbal sets of unrelated form: intransitive verbs of motion (e.g. 'ascend', 'cross over', 'descend'), transitive verbs of motion taking a landform object (e.g. 'climb the mountain', 'cross over the mountain', 'descend the mountain'), and transitive verbs of carrying (e.g. 'carry X up a slope', 'carry X over a saddle', 'carry X down a slope'). As is made clear in Table 11.8, these three verbal sets are morphologically unrelated, with one verbal exception (*l:uu*, both a landscape transitive and a carry verb).

Table 11.8: Verbs of movement in the landscape.

	UP	**DOWN**	**OVER**	**ALONG**
Intransitives	*kee* 'ascend'	*ghîî* 'descend'	*lóó* 'cross over'	*paa* 'go along'
Landscape transitives	*vy:uu* 'ascend X'	*'nuw:o* 'descend X'	*l:uu* 'cross over X'	*kwolo* 'traverse X'
Carry transitives	*km:êê* 'carry X up'	*ghîpî* 'carry X down'	*l:uu* 'carry X over'	*dnyinê* 'carry along'

Figure 11.2 illustrates the oppositions mapped onto an underlying ridge model (see Levinson 2006b and the prior section for the argument structure of Yélî motion verbs, and Levinson 2008 and Levinson & Burenhult 2009 for this domain).

Hills and mountains are one sub-domain where this semplate structures the vocabulary. Another is movement with respect to a watercourse. Rivers in Yélî are understood in terms of three sections: a freshwater section running from source to tidal section, a tidal section that runs into the lagoon, and a lagoon section that runs out to a break in the reef caused by fresh water flow. Each part has a separate term and a separate proper name. Nevertheless river navigation and motion verbs are indifferent to this division. One follows up a watercourse, follows it down or crosses over it, as illustrated in Figure 11.3. It is important to note that the prepo-

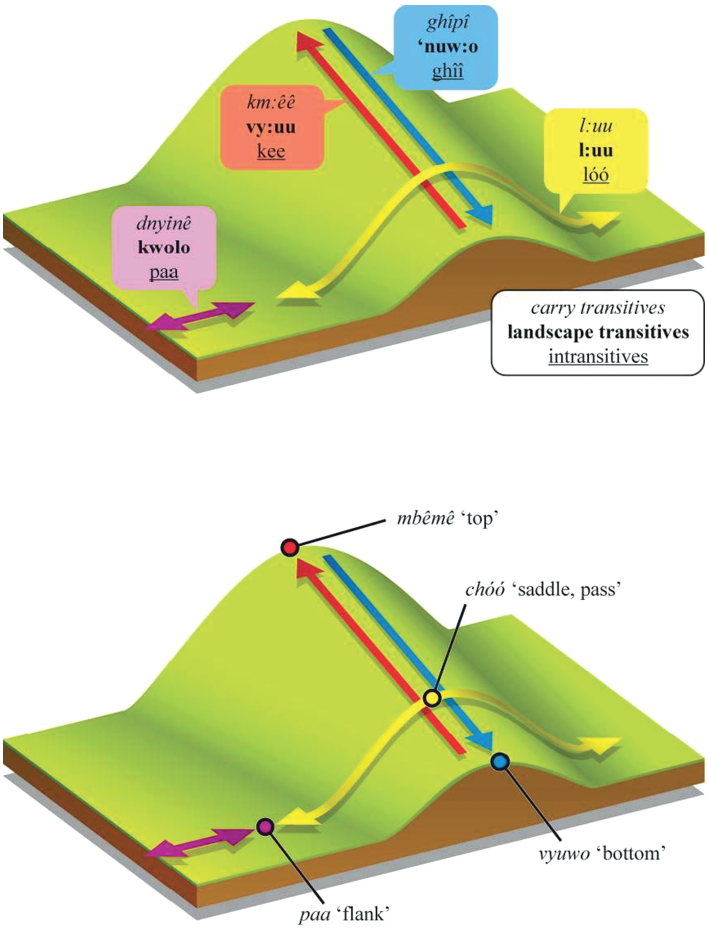

Figure 11.2: Semantic Template UP/OVER/DOWN/ALONG underlying 3 different sets of motion verbs. Top Panel: Intransitive and transitive motion verbs, and 'carry' transitives mapped onto ridge model. Bottom Panel: The vector heads, tails and transits which also play a role in toponyms (After Levinson & Burenhult 2009).

sitions in the English glosses are incorporated in the verbal semantics. Note too that two of the verbs ('follow up', 'follow down') are the same as the corresponding transitives for going up and down hills, but the 'cross over' verb is specialized for water courses. This suggests a generalization: going up a river is like going up a hill, in that it requires greater effort – in other words, the terms are based on 'force dynamics' (Talmy 2000).

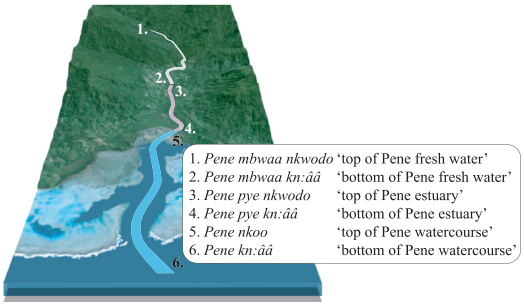

Figure 11.3: Left Panel: Application of the UP/OVER/DOWN scheme applied to water courses – illustrated with 'landscape transitive' verbs. Right Panel: The three segments of a water course, and the named vector heads and tails (illustrated with the Pene river) (After Levinson & Burenhult 2009).

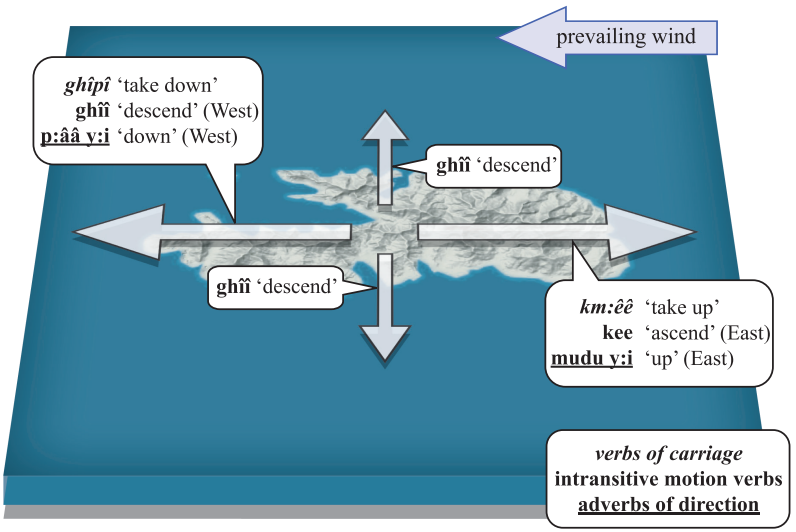

Figure 11.4: Application of the UP/DOWN schema to the macroscale of sea-journeys under prevailing winds from the East: Illustrated here with carry transitives, motion intransitives, and adverbs of direction (After Levinson & Burenhult 2009).

Force dynamics explains the extension of this template to larger geographic space, as illustrated in Figure 11.4, where 'descend' verbs take on the meaning of westward, and 'ascend' the meaning of eastward. This follows from the fact that prevailing winds are from the east, so it is much more laborious to go east than west. (It is not a coincidence that Melanesians and Polynesians explored eastwards, knowing they could easily return in the other direction.) Going north or

south is as easy as going west (in a sailing canoe these would be efficient broad reaches). So now all three sets of verbs (intransitives, landscape transitives and carry transitives) have coherent applications to the flat.

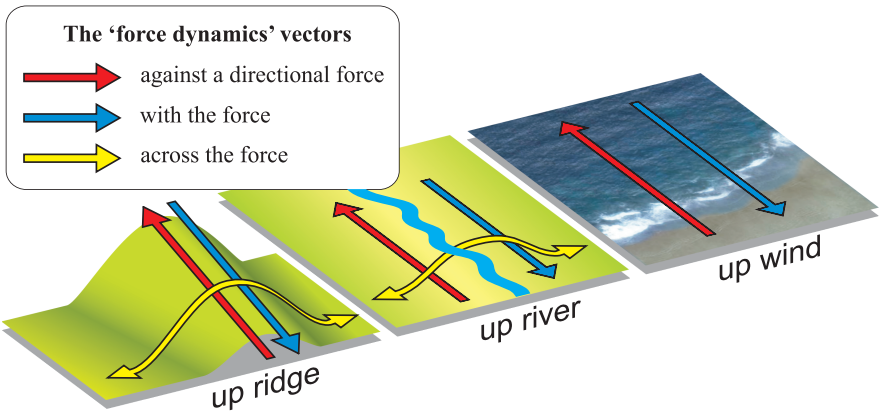

Figure 11.5: Generalized 'force dynamics' model (After Levinson & Burenhult 2009)

The inclined ridge model is also instantiated in nominals labelling the TOP, BOTTOM, SADDLE and FLANK as labelled in Figure 11.2 above. These nominals play an important role in the formation of toponyms, so we have e.g. *Mbu mbêmê* lit. 'at the top of the mountain', a village name; *Pwele vyuwo* 'at the bottom of the Pwele ridge', another village name, *Kpéé paa* 'on the flank of Mt. Kpéé', yet another village name, and *Tââ chóó* 'Mt Táá pass', the name of a pass over the highest mountain.

These observations invite the generalized force dynamics model in Figure 11.5, which explains the parallel usage of vocabulary across domains (landforms, water courses and sea). This force dynamical semplate has static applications as starting points, ending points and midpoints on the motion template, as sketched in Figure 11.2 (bottom panel). Terms for bottom of slope, top of slope, saddle of a pass, flank of a hill, all figure very largely in place names, which we now turn to.

11.3.1 A note on the toponyms of Rossel

Toponyms are formally isolatable as adjuncts that can be introduced into almost any clause without a postposition. They are amongst the longest words in the language, with up to six or more syllables (e.g. *Wédidmyinênyedê*). Some of the rarest phonemes also occur in them – e.g. *kpy* (the palatalized labiovelar stop) is attested in only five words, three of them placenames.

Rossel toponyms are often quite complex, plausibly by origin multi-morphemic expressions, frequently no longer clearly analysable. However many village names are formed on the basis of a proper name plus a descriptive epithet, glossing like 'At the bottom of X (a hill name)', 'X point' (where X is also often a hill name), 'X pass' (where X is a mountain or ridge), 'X on top' (where X is a mountain or hill), and so on, as illustrated in the prior section. Common formations are illustrated in Table 11.9. Sometimes, the whole complex is analysable, as in *Knwede-kó-ntó-km:ee* '*knwede*-branch-dead-shade.of' i.e. 'in the shade of the dead branch of a *knwede* tree', but sometimes it may be entirely opaque. Note that the final morphemes in the table often have built-in locative meanings, either because they are postpositions or special locative forms (e.g. *km:ee* 'in.shade.of.tree') – this may help to explain why toponyms rarely take explicit locatives.

Table 11.9: Composition of village names (sample of 147).

final morpheme	frequency in sample (N=147)	gloss	example	gloss
-kpâpu	12	'ridge, hill'	*Kpêdêkpâpu*	'tree.species- hill'
-'nuwo	10	'point, promontory'	*Yélî'nuwo*	'(east) Point of Rossel'
-vyuwo	10	'bottom of incline'	*Kimbêvyuwo*	'bottom of Kimbê hill'
-mbêmê	8	'on top of'	*Mbumbêmê*	'on top of the mountain/hill'
-ngê	6	(archaic locative, apparently 'on top of')	*Kmîmêngê*	'on top of Kmîmê hill'
-chóó	6	'pass, saddle'	*Dómuchóó*	'pass over Domu'
-km:ee	4	' in shade of tree'	*Kimikm:ee*	'ín the shade of the kimi tree'
-paa	3	'bank of river'	*P:uupaa*	'bank of P:uu river'
-p:uu	3	' on side of'	*Nkélimop:uu*	'on the side of Nkélimo hill'
-nyedê	2	'on the top, near'	*Wédidmyinênyedê*	'on top of Wédidmyinê hill'

Area names are more often monomorphemic than village names, although a number also show regular formations, as illustrated in Table 11.10. These formations suggest that area names often originate metonymically, after the name of a hill, river or path (paths are major landmarks, and most have names of their own.) All area names can have the term *wee* 'district' added after them. More area

names are simple lexemes like Mîlî or Nkâdâ: where these are contiguous, the conjunction (e.g. Mílî Nkâdâ) denotes the conjunction of the areas. A few area names are fully analysable, reflecting historical or mythological events, such as *Kââdî ndê kuwó têdê* 'the place for making the fire of the sun', or *Nkwolo yââ ngê ntoo ndapî* 'wild taro leaf, how many shell coins' (place where big men used to meet for shell money business). Presumably through corruption these can end up as unanalysable multisyllabic terms, such as the four syllable *Mgîkpêmgamkpê*, where only the first syllable clearly means anything (*Mgî* 'Mount Rossel'). For the major named places around the island, see Appendix I.

Table 11.10: Area names.

final morpheme	frequency in sample (N=126)	gloss	example	gloss
-vyuwo	8	'bottom of incline'	*Pwelevyuwo*	'bottom of Pwele' (no mountain Pwele)
-nyedê	4	' on/over' (of paths especially)	*Tiinyedê*	'(path) on beach'
-chó	4	'pass, saddle'	*Kêlechó*	'pass over Kêle'
-yu (=vyuwo)	2	'bottom of incline'	*Nduw:ayu*	'bottom of Nduw:a' (no mountain of that name)
-chedê	2	'near' (especially of rivers)	*Nyâpuchedê*	'near Nyâpu river'
-mênê	1	'inside'	*Yââmênê*	'inside Yââ'
-'nuwo	1	'point'	Kââpyw:aa'nuwo	'Kââpyw:aa point'

Place-naming of natural features and areas is very dense, as has been reported for other tropical islands (e.g. Truk, Goodenough 1966). Features of the lagoons, including each reef segment, tidal pools, sea-weedy areas, etc., have proper names. Due to beliefs about sacred areas, some of these names are also proper names for gods or spirits: thus *Yidika* names a particular off-shore rock, but is also an ordinary man's name – the rock in question is the reification of one of the sons of *Mbaati*, a principal god of Rossel (see Levinson 2008).

11.4 Classification of the natural world

The classification of the natural world in a language expresses a cultural ontology, which in turn has grammatical reflexes. For example, only pigs, dogs, tame birds (i.e. domesticates), boats and people have proper names. The division of

living beings has implications for existential and locative expressions utilizing the constrained set of positional verbs: humans and gods are said to 'sit', animals to 'stand', fish and birds to 'move-in-their-medium' – although roosting birds 'stand' while flying foxes 'hang' (see §4.5.3 and Levinson 2006b).

No systematic ethnobiology has been done on Rossel, and indeed the biological taxa have not been established. Until such collaborative work is done, the following notes must be taken as tentative, but they hint at a great richness of traditional knowledge about the biological environment. The higher level ethnobiological categories are of some special interest as they have some unusual groupings and a number of higher level categories or 'unique beginners'. The higher animals, including birds are relatively impoverished on this island environment, while fish and plants teem.

Figure 11.6 shows some major named divisions and selected sub-branches in the biological world. It was elicited using the following kinds of frame, *tpile tp:oo dyêêdî yintómu, ló nté dé?* 'What are all the kinds of animals?', *kwidi tpile pê dyêêdî ngmê?* 'Is a kwidi a kind of snake?'.

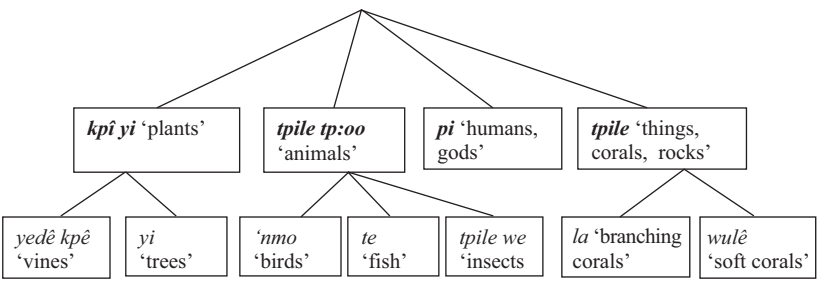

Figure 11.6: Higher level taxa in Rossel ethnobiological classification.

Table 11.11 illustrates these major categories of the natural world in more detail, and gives some glimpse of the taxonomic richness. A great number of superordinates are implicit or unlabelled. There follow some generalizations about part of this classification.

For the birds we have a probably nearly complete scientific identification (Pratt et al. 2005) of the 40 odd non-pelagic species found on Rossel, but without secure linkage to Yélî names, which I have nevertheless attempted to add below by identification from photographs. Most of the Yélî Dnye terms seem to be at the species level, with no terminological recognition of major families like Acciptridae (Hawks) or Columbidae (Pigeons). Speakers do recognize groups like raptors and parrots, but do not name these higher order taxa. Only a few species (fruit-doves) seem to be collapsed at a genus level (*Ptilinopus superbus superbus* and *P.*

rivoli strophium are both called *mb:êê*), along possibly with egrets/herons (*muwó* designates both the black and white phases of *Egretta sacra sacra* but probably covers all three species of Egretta known to occur in the Louisiades) and kingfishers (*tada* 'Halcyon chloris, H. saurophaga'). One false grouping is likely: two kinds of *kpé* or bushfowl are recognized, *Megapodius freycinet macgillivrayi* is *kpé* proper or *pó kpé*, while *p:ââ kpé* seems to denote the unrelated Nicobar pigeon *Caloenas nicobarica nicobarica*. Names are mostly non-descriptive, but there are some exceptions like *kwini kigha pîpî pyu, lit.* 'The bird eating kwini fruits, i.e. *Chalcophaps indica rogersi*'. These descriptive terms probably mostly make sense in mythological terms, e.g. *ndapî nté pîpî pyu* 'shell money food eater i.e. ?*Dicaeum pectorale rosseli*' is a woodpecker species with a reddish breast, as if he acquired his colouring through eating valuable *ndap* shells. Pelagic birds seem to have less precise identification – e.g. *chaa pyu* 'reef doer' seems to cover many birds in the *Laridae*, a bit like our vernacular 'sea gull'.

Small birds collocate with the classifier or epithet *tp:oo*, 'small thing'. Some birds like *chalê*, which is said to inhabit the sacred area of Mt Mgî and only fly to the coast to die, may be entirely mythical, although it was identified from photos as the brown cuckoo-dove, *Macropygia amboinensis cinereiceps* (listed by Pratt et al. 2005 as occurring on Rossel). There are a set of half a dozen verbs denoting bird calls which are specific to certain groups of birds; for example, the *wuwó* or Pitta bird alone is said to *mbiye*, coo in a specific manner. A great deal is known about the habits, food stuffs and mating rituals of the different species, some of which are celebrated in the *tpile we* epic songs (§12.4). It is locally well-known for example that the *mbuwó (Egretta sacra*) heron has two radically different morphs, the black and the white. Each of the dozen clans on Rossel has a bird totem, drawn from the more salient species (see Levinson 2006c).

While terrestrial birds are classified mostly at the species level, forest trees on the other hand seem to show naming at the genus rather than species level (although botanical investigation has been only rudimentary; my identifications were done with the help of the native speaker forester Sam Aloysius). For example the term *chikî* refers to both *Instia bijuga* and *Instia palembanica*, two species of hard wood used for house posts, although local knowledge distinguishes the species by size of fruit. For the tree species scientifically identified (c. 150), most Yélî Dnye terms seem to group them at the genus level. Where the tree is of special interest, like the nut bearer *kponê*, distinct species are likely to be recognized (*kponê têdê*, *kênê kponî*, *mbilimbili té*). Some genera of no particular economic importance are also finely distinguished at the species level, e.g. *vyaapê* is *Podocarpus neriifolius*, *dada yi* is *P. amarus*.

Rossel fish terminology should be of special interest to the ethnobiologist, because tropical fish typically have three distinct life stages in which they may

be of quite different colour and even of very different shape, and may also show sexual dimorphism (related to stages in hermaphroditic species) – a distinction has to be made between natural kind and the colours/shapes of individuals, in a way that might be challenging for folk biology. The following notes are based on tentative identifications from fish handbooks using specimens from fishing expeditions. The Rossel terminology often (but not always) provides different unrelated terms for these stages, but people are perfectly clear that they are of the same biological essence. So for example, the Humphead Wrasse (*Cheilanus undulatus*) is known as *d:êê vyono* in its initial phase, *kpaapî tp:oo kpaapî tp:oo* soon thereafter, *kpeekpee* in its intermediate stage, but *dpuwo* in its terminal phase when it grows a distinct hump on the forehead. But they are all correctly noted to be of one species. Four stages of the Bluefin Trevally (*Caranx melampygus*) are distinguished (*l:ââ mumu > l:ââ > l:ââ mê kaanga > kaanga*), although it may actually turn out that some of these are in reality different species. In these sorts of cases, one term is understood to be the 'basic term' – here it is *l:ââ* for instance. On the other hand, closely similar *Caranx* species such as *Caranx lugubris* are given their own name (*yili keemi*), and recognized to not be in a developmental series of the same kind.

Rossel pelagic fish terms are about 75% (130 of a sample of 170) monomorphemic, about 25% multimorphemic. The multimorphemic terms are not descriptive binomials (cf. English Red Snapper), with the exception of the names for sharks, also classified as fishes. In some cases there is a classifier attached, as in *mbanê pê* 'long toms' (*pê* = snake, worm classifier), or *ghipe dmi* ('broom' incorporates the classifier *dmi* 'bundle') which denotes a leatherjacket species, or *kêêdê w:uu* (Spotted porcupinefish, *Diodon hystrix*), where *w:uu* is the classifier for round things and seeds and the fish in question puffs itself up in defence. (Incidentally, most shell fish species have the classifier *w:uu* attached as part of their name.) In a few cases there is reduplication, as in *kpaapî tp:oo kpaapî tp:oo* (lit. "Cockatoo chick, cockatoo chick"), denoting a largish specimen of giant wrasse (*Cheilanus undulatus*). In a few cases there are descriptive terms like *kpii kn:ââ* (lit. 'bole of the kpii tree (*Syzgium spp*)' denoting the sailfish tang, *Zebrasoma scopas* (perhaps motivated by its huge fins, reminiscent of the large buttesses of the *Syzgium* species – see below on the analogy to trees). Often these descriptive terms are of uncertain meaning, like *mye waa u te* 'Mye Waa her fish' (presumably a mythological allusion, denoting the snapper *Lutjanus fulviflamma*), or *tââ yu che pyu* ('swallow-species leg digging doer', denoting the cardinal goatfish *Parupeneus ciliatus*), or *kââdî vyuwo* ('bottom of the sun', denoting another goatfish species). What one does not find is systematic use of a family or genus term with species qualifiers – terms that at first look like this tend to denote unrelated types of fish (e.g. *kîkî* 'Orchid sp.', 'Convict surgeonfish, *Acanthurus triostegus*', *kîkî pyopwe*, 'Golden trevally, *Gnathanodo*n speciosus', *kîkî tpâpî* 'Damselfish species').

Fish terms show some sort of interesting partial analogy between air, land and sea. Around 20% of fish names are also names for either plant species (typically trees) or bird species, or both (32 out of a sample of 170). In some cases it is clear that this is analogical, for example, *d:aa* denotes a scorpion fish species and also algae and moss – scorpion fish often appear like algal growths. *Keemi* denotes both a tuna species and the *canarium* nut tree, both the most highly prized wild produce in their domain. *K:omo* denotes a wasp fish (*Apistops* sp.) and a dangerous spiny grass, *kêmb:aam* denotes a colourful fish with orange band (*Balistes undulatus*) and a croton plant species with orange band on the green leaves. *T:aa* denotes the best betelnut species, but also a stinging firefish species (both have a 'kick'!). Behavioural analogy may lie behind these parallels, e.g. the conflation under *maalî* of the giant sea-eagle (*Haliaeetus leucogaster*) and a large Grouper species – the term also means a leader of men. Similarly, the deadly stonefish is likened to the gods of sacred places where the uninitiated may not tread without danger (both are *'nmo*). Since the matrilineal clans of Rossel all have bird, fish and plant totems, an analogy between air, land and sea is already established (although each clan always has bird, fish and plant totems with distinct rather than shared names – see Levinson 2006c). Some fish are surrounded by taboos, for example, *njépi*, the yellow-margin triggerfish (*Pseudobalistes flavimarginatus* – a curious fish with incisor like teeth) can only be eaten by men. Myth connects it to an exchange between the high god Ngwonoch:a and the sorcery god Yee (*njépi* was given in exchange for *mtye*, a brightly coloured lorikeet).

Table 11.11 captures an implicit taxonomy of some of the major life forms from animals to plants, based on elicitation asking whether an X is a kind of Y; it is in no way exhaustive of local knowledge. The table over-regularizes, as there is no complete consensus across adults, but it is clear that there are systematic indigenous ideas here, and that Rossel Island would be an excellent location for ethnobiological investigations in an undisturbed ecology.

An ethnobiological taxonomy of this kind can misleadingly suggest a neat parallel with scientific nomenclature. But for a start, there are glaring mismatches with Western biological categories: marine mammals and sharks are classed with fish, and bats with birds. These classifications seem largely based upon the manner of motion through the medium of the natural habitat (water, air), corresponding to the positional verb *m:ii* 'to inhabit or move through the medium of one's natural habitat'. Yet eels and prawns are not classed as fish or snakes or the like, remaining oddballs. Other classifications seem shape based, so tape worms are *mwi pê*, a kind of snake or *tpile pê*, although the millipede *pêpê* despite its name is not in the snake category. Thus quite a few life forms find themselves falling outside a neat taxonomy.

Table 11.11: Major categories of the natural world, with some exemplification of subordinate taxa.

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
***pi* 'humans, gods, spirits'**	*yéli pi 'Rossels'*			
	nkéli pi 'ship (i.e.white) people'			
	dy:ady:a pi 'people of other islands''			
	'*nmédi'nmédi* 'legendary heroes'			
	'*nmo* 'gods of sacred places'			
	kmîna 'ghosts of victims of violence'			
	dp:eene 'ghosts of drowned'			
	mbwee 'ghosts of people who died from sickness'			
	kêêmbadî 'spirits who live in trees'			
***tpile tp:oo* 'animals'**	'*nmo* 'birds'	*mgamî*$_1$ 'bats'	*nkéli mgâmu* 'large flying fox'	
			mgâmu têdê 'small flying fox'	
			kêêlî mgâm 'middle flying fox'	
			kmekme 'flying fox sp.'	
			mbyimi 'brown bat sp.'	

(continued)

Table 11.11 (continued)

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
			meele 'fruit bat sp.'	
			wuluw:u 'small bat sp.'	
			mele tp:oo 'coconut bat sp.'	
		(birds proper)	(birds of prey)	*ghêêmê 'Pandion haliaetus'*
				maalî 'Haliaeetus leucogaster'
				tîmelyu 'Haliastur indus girrenera'
				chilê '?Pandion haliaetus cristatus'
				y:ee 'Accipiter chirrhocephalus rosselianus'
			(other birds)	*ndââtp:ee 'Ninox themacha rosseliana'* *miikii 'Gerygone magnirostris rosseliana'* *tîkî 'Aplonis metallica metallica'* *mbuwó 'Egretta sacra sacra',* *mb:êê 'Ptilinopus rivoli strophium, and P.superbus superbus',* *vyeele tp:oo 'Collocalia esculenta esculenta',* *tada 'Halcyon chloris'* *m:âân:ââ 'Alcedo atthis hispidoedes'* *tii* 'Tanysiptera galatea rosseliana' *kêêlvé 'Sula leucogaster'* *p:ââ kpé 'Caloenas nicobarica nicobarica'* *kpé 'Megapodius reinwardt'* *képi 'Rhipidura rufifrons louiseadensis'* *wuwó 'Pitta erythrogaster meeki'* *muwó mbwono ' Coracina tenuirostris rostrata'* *ghêpê 'Ducula pistrinaria postrema' ndêêdî 'Ducula pinon salvadorii'*

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
				vy:êmê 'Ducula spilorrhoa'
				mb:êê 'Ptilinopus rivoli strophium, ?and Ptilinopus superbus superbus'
				kwini kigha pîpî pyu, lit. 'The bird eating kwini fruits, Chalcophaps indica rogersi'
				mtyîmwe 'Myzomela sp.'
				mbuwó 'Egretta sacra sacra?et al.'
				dyu '?Charadrius dubius'
				vy:êmê 'Ducula spilorrhoa ?and other D. species'
				chala '?Macropygia amboinensis cinereiceps'
				pyipwo '?Pachycephala pectoralis'
				ndapî nté pîpî pyu
				'?Dicaeum pectorale rosseli'
				pyi pyu
				'Monarcha cinarescens rosseliana'
				nkwolo nk:êênî pyu
				'?Pachycephala rufiventris meeki'
				vyeele tp:oo
				' Collocalia esculenta esculenta'
				ghêêdê kuu 'black heron ?Egretta picata'
				*kîdî 'Esacus magnirostris (?*and other curlews?*)'*
				chaa pyu 'seagulls'
				mgî 'Fregator minor'
				kînî ' Sterna fuscata'
				dyu 'Charadrius sp.?'
				(and numerous unidentified species)
				chu 'Eurystomus orientalis waigiouensis'

(continued)

Table 11.11 (continued)

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
			(parrots, cockatoos)	*t:a 'Geoffroyus geoffroyi cyanicarpus'* *mtye 'Lorius hypoinochrous rosselianus',* *kpââpî 'Cacatua galerita triton'* *wee '?Geoffroyus sp.'* *pulu 'Lorius sp.?*
			(birds not on Rossel)	*nkêmî, 'Eclectus roratus',* *wââ 'Corvus orru', tiye* 'bird of paradise', *pumê* 'cassowary'
	te 'fish'	*kpémi*$_1$ 'sharks'	*nkaankaa*	'dawdling (unknown sp.)'
			kpémi$_2$	'(Reef whitetip) *Triaenodon obesus*'
			dpîpyu	'Sleeping one, *Orectolobus sp.*'
			nkéli nk:ââ	'Boat dawn (Hammerhead shark) *Sphyma species*'
			wupe pyu	'Whistling one, *Stegostoma fasciatum*'
				(half dozen further unidentified sp.)
		(fish proper)	(some 200 fish species names collected, most monolexemic or noncompositional)	*kwódokatima 'Naso tuberosus'* (trevallies, etc.:) *l:ââ 'Caranx ignobilis'* *kang:a 'Caranx tile'* *yilikim 'Caranx melampygus'* *kaaka 'Caranx sexfasciatus'* (snappers, etc.:) *'n:ee 'Lutjanus argentimaculatus'* *mum 'Lutjanus bohar'* *kpopwo 'Lutjanus gibbus'* *kpêê 'Aprion virescens'*

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
				(emperors:) *leeng:e 'Lethrinus elongatus'* *mgama 'Lethrinus ramak'* *keñe 'Lethrinus semicinctus'* *kwulâ 'Monotaxis grandoculis'* *ghakeñe 'Lethrinus hypselepterus'* *nkêêm chiyé 'Lethrinus kallopterus'* (sweetlips:) *molâmolâ 'Plectorhincus celebicus'* *káámlum 'Plectorhincus goldmanii'* *tépa 'Plectorhincus chaetodonoides'* (rabbitfish:) *chuukîgha 'Siganus puellus'* *gheede 'Siganus lineatus'* *koo 'Siganus doliatus'* (goatfish:) *mtîpê 'Parupeneus indicus'* *kââdî vyuwo 'Parupeneus pleurospilos'* *tââvyuwo chépyu 'Parupeneus barberinus'* (triggerfish:) *kêêmbam 'Balistapus undulatus'* *mbam 'Balistoides viridescens'* *njép 'Pseudobalistes flavimarginatus'* (parrotfish:) *mbudu 'Scarus russelii'* *wumu kpâ 'Scarus flavipectoralis'* *kpâmokîgha 'Scarus dimidiatus'* *ñodomgê 'Hipposcarus harid'* *ghee 'Scarus ghobban'*

(continued)

Table 11.11 (continued)

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
				nkaaka ‘*Bulbometapon muricatum*’ (cods/groupers:) *ala mga* ‘*Variola albimarginata*’ *dél:ââ* ‘*Plectropomus truncatus*’ *nkwépi* ‘*Cephalopholis argus*’ *wówokê* ‘*Epinephelus fuscoguttatus*’ *kwini yââ kwini yââ* ‘*Epinephelus caeruleopunctatus*’ (and some 150 further names)
		lete ‘dolphins’		
		pywâpwo ‘dugong’		
	(lizards)	*kîghe* *(general)*	*kââdîlyu*	
			chipw:a	
			chii tp:oo	
		tapê (gecko)	*mbuwe*	
	tpile pê ‘snakes’	(other snakes)	*ntii tpile pê*	*ntii kwidi pê* ‘long beche de mer’
				da too pê ‘yellow striped snake’
			wulê	
			kwidi ‘lazy snake’	
			ngoo tê pê ‘blind snake’	
		mw:ee ‘pythons’	*mw:ee*$_2$ *têêpî*	

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
	tpile wee ‘insects’	(ants)	*têpê wee* ‘ant lion’	
			yaawe ‘green ants’	
			mbude ‘large black ant’	
			yââ kî ‘yellow/brown ant’	
			kimiwe ‘large flying ant’	
			tpiitpii wee ‘rain flying ant sp.’	
			y:eng:e ‘termites’	
		(bees)	*wupu*	
			mty:aa wee	
		(grasshoppers)	*kmîpwe*	
			kpele	
		mb:êê (spiders)	*ndipi nyu* ‘trap door spider’	
			momb:êê	
			tââkê	
			kpéki	
		kiminîpî wee (wasps)		
	(unclassified animals)	*pêpê* ‘millipede’		
		tpy:aakaa ‘butterfly’		
		ghînî ‘caterpiller’		

(continued)

Table 11.11 (continued)

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
		kma 'frogs'	mupuwo	
			mbeepi km:ee tp:ee	
			yii kmêêpî	
			ndaandaa	
		mbw:e 'earthworms'		
kpî yi 'plants' (lit. 'vine tree')	*yi* 'trees'	*ghêêdî*$_1$ 'mangroves'	*ghêêdî*$_2$ Rhizophora apiculata	
			liy:aa Bruguiera spp.	
			kêê Xylocarpus granatum	
			mbw:ê Lumnitzera littoralis	
			te	
			ntêdê	
		kponî	*kponî têdê*	
			mbilimbili té	
			kênê kponî	
		yi puu 'shrubs'		

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
	yedê kpê 'vines'	*dp:êê ch:aa*		
		tupu		
		lvamê		
		kwee		
		n:ii		
		mtî		
	mbiye 'grasses'	*komo* 'common grass'		
		paapaa 'razor grass'		
	(palms)	*km:ii* 'coconut'		
		wédi 'sago'		
		('betel nuts')	*t:a a*	
			mbwo	
		('pandanus')	*kweeli, mty:u, dii tap, nkîî, pala, pywââ, pono, chuu*	
tpile 'things, inanimate entities'	(corals)	*wuwo* (hard corals)	*wuwo w:uu* 'spherical corals'	*mbêê w:uu* 'Platygyra spp'
			la 'branching corals'	
			dp:ii 'flat coral type' (Acroporidae spp)	
			mganê mganê yââ 'flat coral type' (*Montipora spp*)	
			dp:êê u nee '(Fungidae family)'	
		wulê 'soft corals'		

11.5 Rossel kin term system

Kin terms form a mini-grammar of their own: they look like nouns, but are no doubt in all languages really relational predicates, with a fully recursive system of indefinite extension (as in 'mother's brother's wife's father'). The Rossel kinship terminology is a complex system adapted to a dual descent system, that is, reckoning both through patrilineal and matrilineal lines. Land inheritance is strictly patrilineal, and residence patrilocal for males (women marry out). Overtly, the system appears matrilineal, with 15 named matriclans, each with bird, tree and fish totems and associated sacred places. These clans regulate marriage, since marriage is strictly clan exogamous. The terminology has generational skewing similar to a Crow III system, as on the Trobriands, but it has alternating generational terms mapped on top, suggesting remnants of a section system. The full system is too complex to describe here (see Levinson 2006c), but major points are here highlighted.

Table 11.13 gives a more or less complete list of the terms, with sample kintype extensions. The extensions often vary according to the sex/gender of the propositus, that is the person from whom the reckoning is made (e.g. Nick in *Nick's grandson*): for compactness and for reasons of my own experience with the system, the account here is male biased, but see Levinson (2006c) for the complementary perspective. These terms are given in citation form, i.e. unpossessed, where possible (some terms are suppletive under possession). Terms always occur possessed however. Possession mostly follows the normal rules for nominals (see §4.2.1), except for the following suppletive forms (Table 11.12), covering the natal family, which are the only terms which are not 'classificatory' (i.e. they pick out a single kin-type and thus do not apply to a large set of kin):

Table 11.12: Rossel natal kin terms.

English gloss	1st person/ Unmarked Form	2nd person 'Your X'	3rd person 'his X'
son	*a tp:ee*	*'nm:ee*	*tp:oo*
daughter	*a tp:ee módó*	*'nm:ee módó*	*tp:oo módó*
father	*m:aa*	*mî*	*u mî*
mother	*niye*	*niye*	*u pye*

Table 11.13: Complete list of Rossel kin terms.

(a) ***Core kinterms in alphabetical order, unpossessed roots***
(Definitions are for male propositus or speaker, except where stated otherwise. F=father, M=mother, B=brother, Z=sister, S=son, D=daughter, H=husband, W=wife)

chênê ZS, ZD, ZDDD/ZDDS and Ds of classificatory *a tîdê*
kââpyââ MM, and all senior generation women of M's Clan
(e.g. MMZ,MMM,MMMM, etc.)
all senior generation women of F's Clan (FM,FMZ,FMM),
and same and –2 generation of women in F's Clan (FZD, FZDDD, FZDDDDD)[47]
kââkââ FB, FF, FFB, FFBS, any male in F's Clan of senior generation (e.g. FMB, FMMB, FMMMB),[48] also any male of any generation in FF's and MF's clans
(e.g. MF, MFZS, MFZDS, MFZDDS, etc.)
also FFZH, MZH, MMH
kaawó FF, FB, MF, MFB, (archaic term, in Armstrong 1928)
kee BS, BD, ZSS, ZSD, MBDS&D, MBSS&D, WZDS&D, DS&D, SS&D, ZSS&D, MMZSS, MMZSSS
kédikââ (for male speaker; q.v. *'n:ââ*) MBW, MMZSW, WZ, HB, BW (this term is used especially in reference to those affines chosen to be in taboo relation, typically eldest and youngest sisters of wife, W of eldest MB, the others of same genealogical relation are called *mbwanko*). The term *kédikââ* and name of person is taboo in address; use name of spouse instead. Therefore not really a classificatory term.
kémedi (for female ego & referent only) BW, MZSW
kênêwó MB (becoming archaic)
kênê MB, MMMB
kîghê = kââkââ (FB and other *kââkââ*'s)
kpâm, kpâmu W
m:aa F (address)
m:aam:aa = mî pyââ (reference only) FZ, FZDD, FFBD, FFFBSDD, etc.[49]
mbywé, mbwiyé WF/WM,DH, WFZ, etc. (reciprocal: *nye mbywé* 'we are in laws');
WM *mbywé pyââ*: **mbwyéngma** = WMB (reciprocal)
mbwó (male speaking) B, MZS, and in general all males of M's Clan of even generations (+2 like MMB, +4 e.g. MMMMB, –2 like ZDS, –4 e.g. ZDDDS)
Also FBS, FFBSS, and any(??) son of a man in father's clan
mbópó (female speaking) BS, BD
mbwanko = WZs who are not designated in taboo relation, i.e. not *kédikââ*.
mg:êê (male speaker, q.v. *vyîlî*) WB, ZH, ZHB
mîchó FZS, FZDDS, FZDDDDS(i.e. males in F's Clan of even junior generations (0, –2, –4),
also FMZDS, MZH for female ego(?).

47 Daughters of FMZ are *m:aam:aa*, but their daughters are *kââpyââ* again, and the next generation *m:aam:aa*, then *kââpyââ*, and so on. Close women of these categories, especially FZD, are unmarriagable.
48 Seniority is reckoned carefully: "We can't call them *a-mbwó*, because they name their sons like me, so only sons of those men are *a-mbwós*".
49 Note that no term is given for FZH, who will receive various designations, derived through other genealogical connection

Table 11.13 (continued)

mî F, FZ (*mî pyââ*)
'n:ââ BSW, SW, MBSW, wife of a classificatory MBS
piye = **pye** M, MZ, MMZD, FBW, FBWZ
tpuutpuu = MZ
m:aam:aa = *mî pyââ* FZ, FMZD (marriageable) **'n:ââ** (female speaker) SW, BSW, MMBW?,BSW, MMZSSW, MMZSSSW, and in general any wife of a kee(?)
niye M (address)
teetee MB = address only for **kênê**
tîdê (male speaking) Z, MZD, MMZDD, or Ds of classificatory *chênê*
tp:ee S, D (*tp:ee modo*)
vyîlî (or **vyîló)** (female speaker, q.v. *mg:êê*) HBW, woman's BW
w:ââ MBS, MBD, MMZSS, WZD (*w:ââ modo*)
(*w:ââ* also means 'dog')

(b) ***Terms in Armstrong (1928), now mostly archaic:***
mbywéngma ZDH, WMB
kênêwó = *kênê*, MB
kaawó FF, MF, FB = *kââkââ* including extensions
kî médi reciprocal address BH, HZ instead of names
tp:ee kaa = first born (still in use)
tp:ee tpuu = last born (still in use)

(c) ***Great-(Great, etc.)-Grandchildren terms***, via both male and female children:
maka = child's child's child; e.g. DDD, DSD, etc. S or D of kee (DS)
wuduma = child's child's child's child, e.g. DSDS
kêêdupu = child's child's child's child's child e.g. DSDSD
(*kêêdupu* also means 'elbow')
mêêdupu e.g. DSDSDD
yi duuwo e.g. DSDSDDD

(d) ***Collective or dyadic kin terms:*** (plural with *knî*, e.g. *u kpâmu ghee knî*). Senior kinsman is the propositus, outside the scope of the plural.
ghee 'woman with S,D or ZS, ZD'
chimi 'man with his ZS' (from *u chênê*)
mupwo 'man with his son' or 'with MBS', **mupwo knî** 'man with his family' or 'woman with her BS or DS'
mbwémi 'man with his brother (or FBS), or woman with her sister' (from *u mbwó*)
lémi 'person with opposite sex sibling'
k:eemi 'man with his BS, SS or DS'; or 'woman with her SS or SD' (from *u kee*)
with *kee*, 'grandchildren'
dy:eemi 'man with his WB' (male propositus only) (not derived from *u mg:êê*)
mbyw:eemi 'man with his WF, WM, or DH' (from *u mbwiyé*)
or 'woman with DH (only)'
'n:eemi 'woman with SW, or HM, HF, HFB, HMB' (from *u `n:ââ*), 'man with SW, MBSW'
vyimi 'woman with BZ or HZ' (from *u vyîló*)

Table 11.13 (continued)

(e) Step kin
wo tp:ee 'step-son of a man, i.e. WS by another man (male propositus only)'
wo tp:ee módó 'step-daughter of a man, i.e. WD by another man (male propositus only)'
w:ââ 'step-son or daughter of a woman, i.e. HS by another woman (female propositus)', children of another wife (wife speaking)
pyekiy:a 'step-mother, i.e. FW not M'
wo mî 'step-father, i.e. MH not F'

I will return to the core terms, but first a few notes on the non-core vocabulary listed under (b)–(e). The set of great-great-great. . . grandchildren terms in (c) reflects the very deep mental genealogies that Rossel people maintain – normally 8–10 generations in the male line, 4–6 in the female line (these terms are used to assert connections with ancestors).

The set of dyadic terms in (d) are of considerable interest, as they reflect a deep Papuan past: "dedicated dyad roots seem to be unique to Papuan languages" while true dyad suffixes are an Australian areal feature (Evans 2006). These terms refer to a dyad, namely a focal (usually senior) kinsman (e.g. in the case of *chimi* classificatory MB) and a paired junior kinsman (e.g. classificatory ZS). The dyad terms are lexicalized roots, although their origin in the junior member of the term is sometimes obvious, as noted in Table 11.13(d). Thus we have *k:eemi*, 'a man with BS, SS, DS i.e. a man with one of his *kee*'. Unless augmented, they take the dual form of the verb, and cannot combine with singular marking. They can be pluralized with the augmentative plural *knî*, which only has scope over the junior members, so *chimi knî* means 'an uncle with his nephews' (i.e., at least three in total). The terms are internally possessed (Nick Evans points out to me), so no overt possessive is employed with them: *Yidika*$_i$ *chimi knî*$_j$ glosses 'Yidika his$_i$ nephews$_j$ and their$_j$ uncle$_i$'. These terms cannot combine with numbers, so one cannot say *Yidika chimi knî limi* 'Yidika and his five nephews', but one can use general quantifiers, e.g. *Yidika chimi knî yintómu*, 'Yidika and all his nephews', or *Yidika chimi knî yilî a lêpî* 'Yidika and lots of his nephews are coming'. Some further possibilities and constraints are shown in example (575) (note e.g. that a single propositus can be used for more than one dyad, as in h.):

(575)	a.	*Yidika*	*chimi*	*knî*	*yintómu*	*knî*	*y:oo*	*Stephen*
		Yidika	nephew.dyad	Aug	all	Aug	ERG	Stephen
		dê	*vy:a*	*ngmê*				
		3PROXpast	hit	PFS.3sO				
		'Yidika and all his nephews hit Stephen'						

b. *chimi* *a* *lêpî* *mo*
nephew.dyad 3CI going dS.intransCI
'A man with 1 nephew is going'

c. *chimi* *knî* *a* *lêpî* *té*
nephew.dyad Aug 3CI going plS.intransCI
'A man with 2 or more nephews is going'

d. *mupwo* *a* *lêpî* *mo*
father.child.dyad 3CI going dS.intransCI
'A man with a S or D is going'

e. *ghee* *a* *lêpî* *mo*
mother.child.dyad 3CI going dS.intransCI
'A woman with a S or D is going'

f. *Yidika* *dy:eemi* *a* *lêpî* *mo*
Yidika man&WB.dyad 3CI going dS.intransCI
'Yidika and his WB are coming' (note this is asymmetrical, it cannot mean 'man with his ZH')

g. *nye* *mbwémi*
we2 brother.dyad
'We two are (classificatory) brothers' (used e.g. in oaths)

h. *Yidika* *chimi* *knî* *mupwo* *knî* *dê*
Yidika nephew.dyad Aug son.dyad Aug 3immpast
lee *dmi*
went 3plPIintrans
'Yidika went with his nephews and his sons'

i. *Yidika* *chimi* *mupwo* *dê* *lee* *dmi*
Yidika nephew.dyad son.dyad 3immpast went 3plPIintrans
'Yidika went with one of each, a nephew and a son'

j. *Yidika* *chimi* *knî* *Yidika* *mupwo* *dê*
Yidika nephew.dyad Aug Yidika son.dyad 3immpast
lee *dmi*
went 3plPIintrans
'Yidika went with two or more nephews and one son'

Returning to the core terms listed as (a) in Table 11.13, these classificatory terms are used in three distinct but compatible ways. First, they are used by calculating the exact genealogical connection, and then (on one theory) applying reduction rules of the sort argued for by Lounsbury (1965). Figure 11.7 shows the mapping of the terms onto an idealized genealogical network, where the sloping lines indicate generational conflations by Crow skewing rule (the lines ignore the confla-

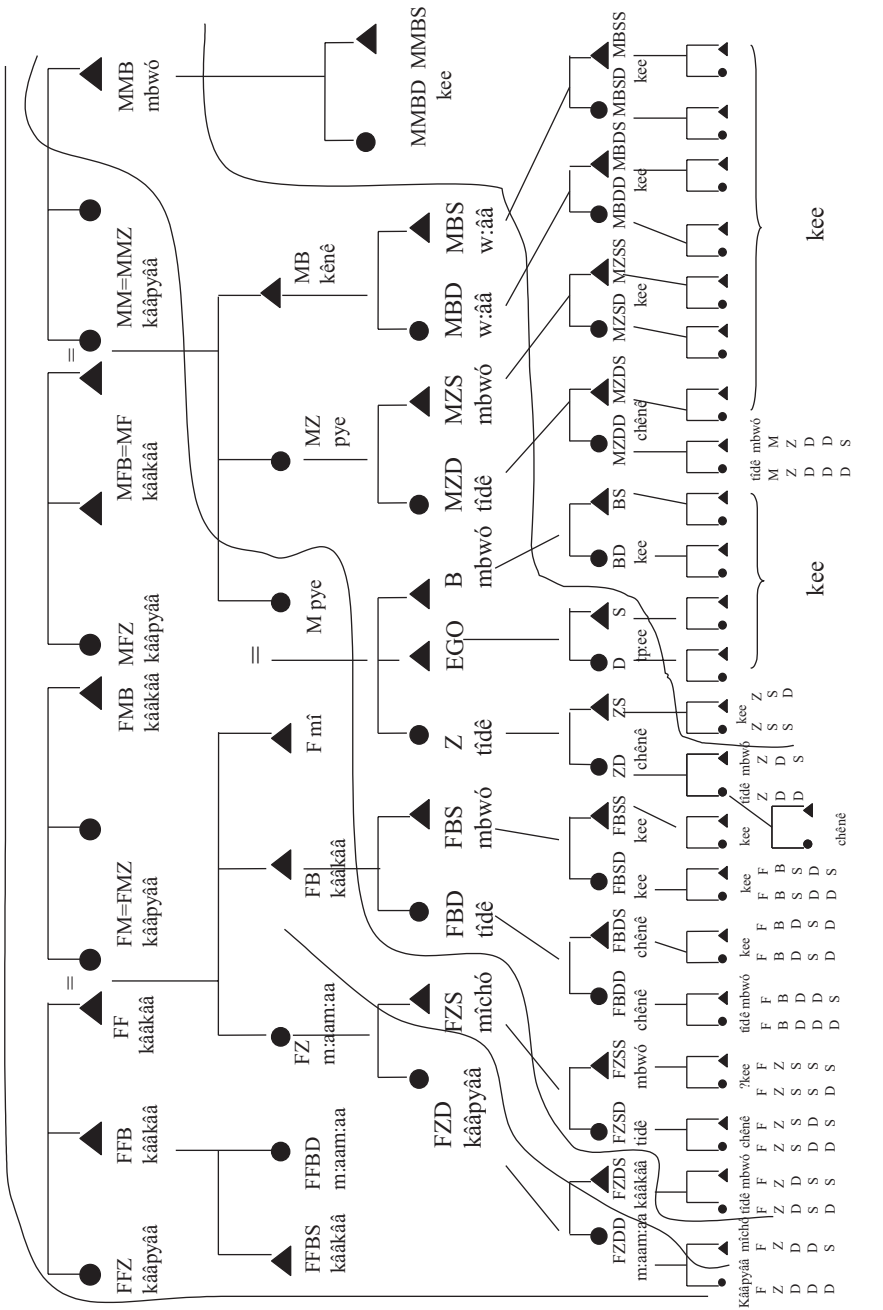

Figure 11.7: The Rossel kin terms and generational skewing.

tion over alternating generations – this is what makes the system different from a normal Crow system).

The second way the terminology is used is sociocentrically, in terms of ego's significant other matriclans.

Figure 11.8 shows this for a male ego. This makes clear the coherence of the system when mapped onto significant clans, and the equivalence of alternating generations (shown by arrows).

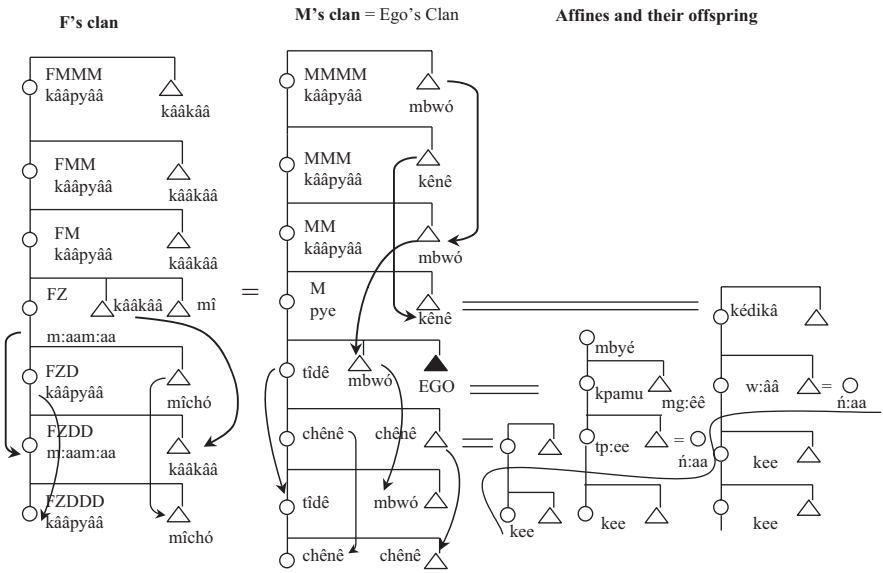

Figure 11.8: Rossel system (male ego).

Interestingly, the system maps equally well onto the patrilines, which form by far the most important corporate groups as shown in Figure 11.9:

m/f	F's Matriclan	F's Patriline
+4	*kââkââ/kââpyââ*	*kââkââ/kââpyââ*
+3	*kââkââ/kââpyââ*	*kââkââ/kââpyââ*
+2	*kââkââ/kââpyââ*	*kââkââ/kââpyââ*
+1	*kââkââ*/m:aam:aa*	*kââkââ*/m:aam:aa*
0	*mbwó/tîdê*	*mbwó/tîdê*
-1	*kââkââ/m:aam:aa*	*kee/kee*
-2	*mîcho/kââpyââ*	*kee/kee*
-3	*kââkââ/m:aam:aa*	*kee/kee*
-4	*mîcho/kââpyââ*	*kee/kee*

Figure 11.9: Terms applied to father's matriclan (*mî u p:uu*) vs. father's patriline (*mî u tii*).

The third important way the system is used is as a system of reciprocals. From the usage of say, my mother to another kinsman, I can triangulate my own proper usage without knowing anything about the exact genealogical relationship in question. Table 11.14 gives a subset of the equivalence rules involved.

Table 11.14: Classificatory rules for a male ego.

If my father calls a man	*a mbwó*,	I should call him	*a kîghê* or *a kââkââ*.
	a kênê		*a kîghê* or *a kââkââ*
	a kîghê or *a kââkââ*		*a kîghê* or *a kââkââ*
	a chênê		*a mîchó*
	a mîchó		*a kîghê* or *a kââkââ*
	a kee		*a mbwó*
	a tp:ee		*a mbwó*
	a w:ââ		*a mbwó*
If father calls a woman	*a w:ââ*	I should call her	*a tîdê*
	a kee		*a tîdê*
	a chênê módó		*a kââpyââ*
	a m:aam:aa		*a kââpyââ*
	a kââpyââ		*a kââpyââ*
If mother calls a man	*a mbópó*	I should call him	*a w:ââ*
	a tîdê		*a kênê*
	a kênê		*a mbwó*
	a mîchó		*a kîghê*
If mother calls a woman	*a kââpyââ*	I should call her	*a kââpyââ*
	a m:aam:aa		*a m:aam:aa*
If M or F calls a woman	*a pye*		*a kââpyââ*
If *a kênê* calls a woman	*a ‘n:ââ*		*a ‘n:ââ*
	a pye		*a kââpyââ*
If *a kênê* calls a man	*a mbywé*	I should call him	*a mbywé*
	a kênê		*a mbwó*
	a kîghê		*a kîghê*

Since the island is a closed world, presumptive kinship is employed. When Rossel islanders travel to another village, they always first seek their closest kin – it is likely that a woman relative will have married there, and in a society with widespread belief in sorcery, kin are by far the safest persons to stay with. Kinship remains by far the most important conceptual and practical principle for social organization. Experiments show that children as young as six years of age can recite ancestors up to 11 generations deep, and likely soon after master the main elements of the system and can reason using the recursive kinship algebra, so being able to predict their own proper application of a term to a referent from listening to e.g. father’s usage (Casillas and Levinson, in preparation).