

Where have all the verbs gone? Remarks on the organisation of languages with small, closed verb classes

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1. Questions

In most of the world's languages verb roots comprise an open class. There are, however, some languages that have a small, closed class of verb roots and, furthermore, lack processes for deriving new, morphologically complex verb bases. Where have all the verbs gone in these languages? Do languages with closed verb classes exhibit common principles of semantic and grammatical organisation that distinguish them from open verb class languages? Is there a correlation between particular kinds of 'verbal' concepts and particular kinds of complex predicate structures? Are there any verbal concepts that are always expressed by a single verb root? How do closed verb class systems arise?

2. Approach and background

We compare verbs and complex predicates in three unrelated languages – one with an open verb class (English) and two with small, closed classes of verb roots that occur as independent verbs and inflecting for subject person-and-number and tense, aspect and mood, one from north central Australia and one from the Trans New Guinea family.

In northern Australia many languages have a closed class of inflecting verbs. Some languages have as few as five to a dozen such verbs, others up to about 250. Jaminjung represents a type in which most inflecting verbs function as independent verbs and have not been strongly grammaticised (Schultze-Berndt 2000).

In New Guinea a number of languages of the Trans New Guinea family have between 60 and 150 inflecting verbs, and all or nearly all verb roots can occur as independent verbs. These include the Chimbu-Wahgi languages centred in the Western Highlands and Chimbu Provinces of Papua New Guinea and Kalam and its close relative, Kobon, spoken in the Bismarck and Schrader Ranges, Madang Province. Kalam, which has about 130 verb roots, is the best described. There is a large dictionary and this is probably close to an exhaustive list.

Jaminjung and Kalam both make up for their paucity of verb roots by having large, open classes of complex predicates. Before considering the types and functions of CPs, let us look at some properties of verb roots in the three languages that may be relevant to understanding how CPs work.

2. Some verbs are more important than others. Notes on verb root meanings, frequency and polysemy

Some possible universals emerge from a study of the meanings, frequency and polysemy of verb roots in these three languages.

2.1 Frequency

Are some verb root meanings much more common than others in discourse? Do different languages exhibit a similar frequency ranking? We can only give very rough answers to these questions because frequently used verbs tend to be highly polysemous and none of the data

sources distinguish the different senses of verb roots. A necessary compromise is to assign a single, ‘cover’ gloss to each verb root.

Jaminjung. The 10 most common verbs in Jaminjung make up 82.2 percent of all verb root tokens in a sample of text. The most frequent 15 verbs account for 90.5 percent of tokens (Schultze-Berndt 2000:415-417).

Table 1 Frequencies of productive inflecting verbs in Jaminjung

verb	percent	verb	percent
1. -yu(nggu) BE	22.2	14. -minda EAT	1.5
2. -ijga GO	13.2	15. -wa BITE	1.4
3. -mili GET/HANDLE	7.8	16. -ina(ngga) CHOP	1.2
4. -yu(ngu)SAY/DO	7.1	17. -unga LEAVE	1.1
5. -arra PUT	6.9	18. -anJama BRING	1.0
6. -ruma COME	6.5	19. -irriga COOK	1.0
7. -ma HIT	5.9	20. -wardgiya THROW	1.0
8. -irdba FALL	5.2	21. -irna BURN	0.9
9. -ngawu SEE	4.5	22. -arrga APPROACH	0.8
10. -uga TAKE	2.9	23. -wardagarra FOLLOW	0.7
11. -ngarna GIVE	2.1	24. -(ma)linyma MAKE	0.6
12. -muwa HAVE	1.8	25. -inama KICK/STEP	0.5
13. -ijja POKE	1.7	26. -yungga TAKE AWAY	0.2

Kalam. In a corpus of about 14,000 words representing a variety of spoken texts, the 10 most frequent verbs in Kalam make up 78.5 percent of verb root tokens. Fifteen verb roots make up 89.6 percent of such tokens and 30 roots account for 97.6 percent. However, all the most common verbs are highly polysemous (see below) and these figures do not show the frequencies of particular verb senses.

Table 2 The most frequently occurring verb roots in Kalam

	percent		percent
1. ag- SAY/SOUND	15.9	16. ñag- SHOOT	1.2
2. g- MAKE/HAPPEN	12.4	17. agi- HEAT S.TH.	0.9
3. md- STAY/BE	9.3	18. ym- PLANT	0.8
4. am- GO	9.3	19. yok- MOVE AWAY	0.73
5. n•- PERCEIVE	7.2	20. yap- DESCEND	0.65
6. ap- COME	7.0	21. tan- ASCEND	0.54
7. ñ•- CONSUME	5.3	22. kum- DIE/MALFUNCTION	0.53
8. ay- STABILISE	5.0	23. yom- SHOW	0.45
9. d- HOLD	4.9	24. su- BITE	0.42
10. pk- HIT	3.4	25. taw- STEP	0.35
11. tk- SEVER/PART	3.3	26. ju- WITHDRAW	0.25
12. ñ- TRANSFER	2.3	27. wok- EJECT FR. MOUTH	0.23
13. kn- LIE DOWN	2.1	28. ad- COOK IN OVEN	0.23
14. tag- TRAVEL	1.8	29. tb- CUT/CHOP	0.21
15. jak- STAND	1.5	30. sk- ENTER	0.18

English West (1953) gives the frequencies of English words and their main senses and grammatical uses in a large corpus drawn from written sources. For main or lexical verbs (i.e. excluding the auxiliaries *be, have, will, used to, keep*, etc. and other grammaticised uses of verbs such as supporting *do*) the frequencies of the most common 30 verb roots in a corpus of approximately 250,000 such tokens is as follows (with the qualifier that figures for *be* as a copula are not available):⁶

Table 3. The most frequent 30 main verb roots in English (after West 1953)

verb	percent	verb	percent	verb	percent
1. say	5.0	11. find	1.53	21. bring	1.12
2. make	3.84	12. think	1.43	22. turn	1.11
3. go	3.5	13. tell	1.42	23. hold	1.0
4. have	3.4	14. call	1.39	24. keep	0.97
5. see	2.81	15. seem	1.35	25. hear	0.92
6. take	2.8	16. become	1.29	26. give	0.87
7. do	2.4	17. show	1.28	27. get	0.87
8. know	2.25	18. begin	1.21	28. continue	0.85
9. ask	1.62	19. look	1.16	29. carry	0.85
10. work	1.59	20. stand	1.07	30. open	0.83

The most frequent 10 verb roots make up almost 30 percent of the tokens in West’s corpus. The top 30 verb roots account for about 52 percent of the total, the top 50 make up about 66 percent and the top 100 about 80 percent.

2.2 Polysemy

There is a correlation between the frequency of a verb root and its degree of polysemy.

Jaminjung. Jaminjung’s 35 verb roots yield a total number of verb root senses of about 100 (my analysis, based on an interpretation of Schultze-Berndt’s data).. The 15 most frequent verbs have some 70 specific senses between them (discounting ‘basic’ meanings). Of the 70 senses, 48 can occur in independent verbs, i.e. in the absence of a coverb. This is an average of about 4.6 senses per verb including phrasal uses, and three senses per verb for independent uses. Less common verbs have fewer senses.

Kalam. The Kalam dictionary distinguishes an average of about three senses per verb root.

Table 4 Number of senses attributed to the the most frequent 30 verbs in Kalam

	no. senses		no. senses
1. ag- SAY/SOUND	8	16. ñag- SHOOT	4
2. g- MAKE/HAPPEN	7	17. agi- HEAT S.TH.	3
3. md- STAY/BE	7	18. ym- PLANT	1
4. am- GO	6	19. yok- MOVE AWAY	4
5. n•- PERCEIVE	18	20. yap- DESCEND	5
6. ap- COME	5	21. tan- ASCEND	5
7. ñ•- CONSUME	7	22. kum- DIE/MALFUNCTION	8
8. ay- STABILISE	7	23. yom- SHOW	2
9. d- HOLD	10	24. su- BITE	6

10. pk-	HIT	6	25. taw-	STEP	7
11. tk-	SEVER/PART	11	26. ju-	WITHDRAW	4
12. ñ-	TRANSFER	6	27. wok-	EJECT FR. MOUTH	1
13. kn-	LIE DOWN	5	28. ad-	COOK IN OVEN	1
14. tag-	TRAVEL	3	29. tb-	CUT/CHOP	1
15. jak-	STAND	4	30. sk-	ENTER	2

The most frequent 10 verb roots average 8.7 senses each. The second most frequent 10 average 4.6 senses each. The third most frequent 10 average 3.7 senses each. The remaining verbs (105) average 2.2 senses each.

English. The 10 most polysemous English verbs in *The Macquarie* total 552 numbered senses – an average of 55 senses per root. The 200 most polysemous verbs total over 3000 senses, an average of 15 per root.

Table 5 Number of main senses for the most polysemous English verb roots in *The Macquarie Dictionary of English*

run	78	draw	33
take	73	call	32
strike	61	keep	32
break	60	raise	32
turn	55	rise	32
set	54	spring	32
pass	48	touch	32
roll	44	beat	31
open	40	cast	31
cut	39	sink	31
go	37	serve	30
drop	36	work	30
make	36	bear	29
play	36	blow	29
shoot	36	do	29

There is a strong correlation between frequency and extent of polysemy. Of the 30 most frequent English verb roots, 23 have more than ten senses. The correlations have not yet been fully charted.

Although Jaminjung and Kalam differ greatly from English in the size of the verb root stock, all three languages show certain striking similarities in regard to the frequency and meaning of particular concepts expressed by inflecting verbs.

(i) *A 40/50 relation.* In all three languages fewer than 40 verb roots make up more than 50 percent of the total verb root tokens in text. (The reference here is to lexical verbs, not to verbs that have taken on grammatical functions, e.g. semantically bleached verbs whose sole or main function is to carry inflections, or verbs that have become auxiliaries or markers of aspect.)

(ii) *Frequency/polysemy correlation.* High frequency verb roots tend to be much more polysemous than less frequent verb roots.

(iii) *Rank order of concepts*. The basic meanings and frequency rankings of the 20 most common verb roots in the three languages show a number of correspondences.

The commonalities summarised in (1)-(iii) may be proposed as possible universals.

2.4 Are there any universal verb root meanings?

Typically ‘verbal’ meanings can be defined cross-linguistically as those which are expressed by verb roots in most language families. An alternative approach, following Hopper and Thompson (1984), is to rank meanings in terms of how closely they correspond to dynamic events opposed to durable states. A comparison of Jaminjung (and other Australian languages) and Kalam (and other TNG languages) suggests the following hypothesis:

Almost all typically ‘verbal’ concepts are expressed phrasally in one language or another.

Are there any verbal concepts that are expressed by a verb root in *every* natural language? Our sample of languages is too small to speak with confidence on this matter but it offers some pointers. One might make a short list of candidates by comparing the sense units that are common to Kalam, Jaminjung and other languages with small, closed verb classes.¹⁾

Meanings expressed by a single verb root in both Kalam and Jaminjung. To be added.

3. Where have all the other verbs gone? Gone to CPs every one

Dixon (1991) offers a detailed taxonomy of the 900 commonest English verb roots based on their meanings and syntactic behaviour. He recognises about 30 major types of verbal concepts and examines how their semantic properties map onto syntactic relations.

Verbal concepts naturally divide into two sorts:

PRIMARY – those directly referring to some activity or state, i.e. verbs which can make up a sentence by themselves with appropriate NPs filling the various semantic roles, e.g. *I HIT her, She SWAM across the river, He MUNCHED the apple, They WATCHED it*.

These are lexical verbs in every language.

SECONDARY – those providing semantic modification of some other verb, with which they are in syntactic or morphological construction, e.g. *I MAY hit her, She TRIED to swim across the river, We STOPPED him munching an apple, I LET them watch it*.

(Dixon 1991:88)

These major categories have subclasses, given arbitrary labels A, B, etc. PRIMARY-A verbs must have NPs (not complement clauses) in subject and object slots. The semantic types with this property are:

MOTION, e.g. *run, return, take, pull, throw, fall, spill*

REST, e.g. *sit, stay, put, hang, surround, hold*

AFFECT, e.g. *hit, punch, cut, sweep, cover, twist, burn*

GIVING, e.g. *give, lend, pay, present, donate, exchange*

CORPOREAL, e.g. *eat, taste, kiss, laugh, sleep, bleed*

WEATHER, e.g. *rain, snow, thunder, hail*

COMPETITION, e.g. *beat, win, attack, lose, compete*

SOCIAL CONTRACT, e.g. *appoint, govern, manage, join, marry*

USING, e.g. *use, employ, operate, wear, waste*

OBEYING, e.g. *obey, process, deal with, grant, perform*

PRIMARY-B verb may have NPs filling subject and object slots but they also allow – as an alternative – a complement clause to fill one of the slots, e.g. *I understand my father, I understand that he refused to sign the document,...* [Types include]

ATTENTION, e.g. *see, hear, notice, discover, watch*
THINKING, e.g. *think (of/about/over), imagine, assume; know, learn, understand, realise; believe, suspect*
DECIDING, e.g. *decide (on), choose, resolve, elect*
SPEAKING, e.g. *shout, remark, propose, inform, tell, order, ask, promise*
LIKING, e.g. *like, love, hate, loathe, prefer, envy*
ACTING, e.g. *act, behave, copy, imitate, reproduce*
HAPPENING, e.g. *happen, take place, commit, experience, undergo*

There are also two types that may have complement clauses in both A and O slots:

COMPARING, e.g. *resemble, differ (from), compare, measure, cost*
RELATING, e.g. *depend on, relate to, imply, due*

Various types of SECONDARY verbs are distinguished. Secondary A verbs have the same subject as the verb they modify.

MODALS, e.g. *will, can, should, must*
SEMI-MODALS, e.g. *be going to, be able to, have got to*
BEGINNING, e.g. *begin, start, finish, complete, continue*
TRYING, e.g. *try, attempt, succeed, fail, practise*
HURRYING, e.g. *hurry, hasten, dawdle*
DARING, e.g. *dare, venture*

Secondary B verbs introduce an extra role, the Principal or the Timer, as subject of the main verb.

WANTING, e.g. *want, wish (for), hope (for), need, require, expect, intend*
POSTPONING, e.g. *postpone, delay, defer, avoid*

Secondary C verbs introduce an added role, the Helper or Causer, as subject of the main clause.

MAKING, e.g. *make, force, cause, tempt, let, allow, prevent*
HELPING, e.g. *help, aid, assist*

Secondary D verbs add a role introduced by *to*:

SEEM: *seem, appear, happen, look*
MATTER: *matter, count*

Each of the major classes has various subclasses. For example, Dixon divides MOTION verbs into seven subtypes, including mode of motion (*run, walk, crawl, slide, wriggle*). REST verbs are divided into six subtypes including stance verbs (a. *sit, stand, lie*, b. *stay, settle*); and so on.

English-Kalam verb correspondences. About half of the 30 major semantically-motivated classes of verbs recognised by Dixon for English have no semantic equivalents among the verb roots of Kalam. There are no verb roots for the Primary classes he calls *weather, social contract, obeying, deciding, liking, comparing* and *relating*. The same is true for all or almost all of the Secondary classes *helping, daring, hurrying, postponing, trying, seeming, mattering, modals* and *semi-modals*. For each of several other Primary classes, e.g. *speaking, thinking, attention, giving, making, happening* and *corporeal*, Kalam has just a single verb root or a few roots that are comparable in meaning (though it should be kept in mind that these are polysemous). It has somewhat larger sets of verb roots for some semantic categories, e.g. *motion (along a path), posture* and *affecting*.

English-Jaminjung correspondences. Even fewer correspondences. Details to be determined.

4. Complex predicates in Jaminjung

Jaminjung inflecting verbs and compound verbs

In Jaminjung every finite clause must have an inflecting verb. Inflecting verb roots are a closed class with about 35 members, of which only 26 are productive. All productive inflecting verbs can occur as simple (i.e. independent) verbs. Simple verbs make up 40 percent of all verbal predicates in text.

Jaminjung makes extensive use of phrasal predicates which Schultze-Berndt (2000) calls ‘compound verbs’. Compound verbs consist minimally of two words: a non-inflecting ‘coverb’ and an inflecting verb, which together form a semantic unit.

- (1) *[baramaj gani-yu] lambarra-ni.*
promise 3sg:3sg-say.PAST + father.in.law-ERG
‘He promised it (i.e. to give his daughter), the father-in-law.’

Compound verbs form an open class of lexicalised phrasal predicates, with over 1000 recorded members.

All 26 productive inflecting verbs participate in compound verbs, although seven occur with many more coverbs than the rest. The semantic relationships between coverbs and inflected verbs are for the most part transparent, given a fine-grained analysis of contextually conditioned verb root senses. The kinds of meanings that inflected verbs contribute to such compounds are largely lexical, although some grammaticisation is evident.

Jaminjung lacks serial verb constructions. It seems that the semantic range of compound verbs is extended to cover certain event sequences, as in:

- (2) *Lanhginy-bina [lutrr ga-rdba-ny].*
wood-ALL pierce 3sg-FALL-PAST
‘He fell onto a stick so that it poked him.’ (Schultze-Berndt 2000: 488)

The reliance on complex predicates (60 percent of verbal predicate tokens in text) is much higher in Jaminjung than in Kalam (25 percent). This difference correlates with the fact that in Kalam almost all senses of high frequency verb roots can be used independently whereas this is not the case in Jaminjung.

Generic verbs. “Jaminjung...[has] an overt system of event categorisation” (Schultze-Berndt 2000:211). The productive verb roots are termed ‘generic’ or ‘event classifying’ verbs because all phrasal predicates can be grouped into a limited number of semantic classes according to the generic verb they contain. As a generic verb is obligatory in every clause, these verbs exhaustively carve up the semantic space covered by verbal predicates.

In other words, a Jaminjung ... speaker has to select one of a small number of verbs in every finite clause, and thereby ‘sorts’ all event expressions into a small number of categories. ...[It] has to be shown, of course that the choice of verb has a semantic basis, rather than being randomly or lexically determined by a given coverb. If this can be demonstrated one can ask what constitutes the conceptual basis of event categorisation in this language. (Schultze-Berndt 2000:5)

Some of the productive inflecting verbs are highly polysemous. However, Schultze-Berndt proposes an analysis of each verb in which most or all of its senses are subsumed under,

or are natural extensions of a single basic sense. These proposals underpin her claim that the semantic relationship between inflecting verbs and coverbs is very largely systematic.

Coverbs. Jaminjung coverbs are treated by Schultze-Berndt as a major part of speech distinct from nominals, verbs and minor word classes. The class of coverbs mainly covers semantic domains that are associated, cross-linguistically, with verbs but it also covers some domains associated with adverbs, adjectives, prepositions and nominals, e.g. sound emission, motor pattern, posture, transfer, direction of gaze, colour, manner, and phase of event. A subset of coverbs is sound symbolic.

Usually a coverb is compatible with just a small range of classifying verb partners. Over 20 classes of coverbs are distinguished according to the verbs they combine with. Semantic relations between verbs and coverbs are very largely systematic. Seven generic verbs occur with more than 20 coverbs: those glossed BE, FALL, GO, COME, TAKE, GET/HANDLE, HIT, SAY/DO.

Jaminjung complex verbs as both constructions and lexical units. *Each class of coverbs together with its classifying verb(s) forms a minor construction type.* The immediate constituents of the construction are a pair of lexical classes, the coverb and inflecting verb, both with highly restricted memberships. Each such construction generates a set of compound verbs with a semantic dependency constraint in which a particular class of coverbs selects a particular sense of the inflecting verb. At the same time each compound verb generated by the construction is a conventional expression, the standard way of representing a type of event. Schultze-Berndt writes as follows of the double role of Jaminjung complex verbs:

In the view maintained here,...canonical complex verbs have a dual nature; they are licensed by a productive construction, and at the same time constitute lexicalised collocations... By describing restrictions on complex verb formations, one therefore simultaneously describes lexicalisation patterns (after all the majority of predicates in Jaminjung are complex rather than simple), and restrictions on the fillers of a construction. (Schultze-Berndt 2000:525)

It might be objected that most of the complex predicates of Jaminjung are too irregular in their semantics to be called productive constructions. If a particular sense of an inflecting verb occurs only when the verb collocates with a small set of coverbs aren't the resulting complex verbs idioms, and so best treated as purely lexical? The answer is that they are simply behaving as high frequency verbs do in every language, i.e. having a number of senses that apply in 'restricted collocations'. Compare the different senses of the English verb *pull* that are selected by different nouns in verb + direct object constructions, such as *pull a punch* (use less than full power), *pull a trick* (perform deceptively), *pull a muscle* (strain by extending), *pull a horse* (of a jockey, hold or check the horse when it is galloping) and *pull a drive* (in golf, cricket, etc., hit a ball so that it flies to the left, in the case of a right-handed striker).

The growing body of corpus-based research on phrasal expressions confirm the pervasiveness of such expressions in spoken and written English (for extensive references, see Cowie 1998, Wray 2002). For example, almost half the verb + complement constructions in English written discourse consist of restricted collocations (Cowie 1991).

5. Complex predicates in Kalam

In Kalam the unmarked word order is SOV. Locatives can precede or follow the verb. The morphological and syntactical properties of verbs are highly distinctive. Verb roots are the only part of speech to carry inflectional suffixes marking tense, aspect or mood, Subject person-and-number, and switch reference. Coordinate-dependent verbs (also known as ‘medial verbs’) are marked for switch reference, i.e. same or different subject relative to the following verb in the sentence.

5.1 Verb adjunct constructions and quasi verb-adjunct constructions.

Verb adjunct constructions (VACS) denote a single conceptual event broken down into *generic* and *specific* semantic components. The generic component is marked by the verb root, which classifies the event as being of a certain general type. The adjunct gives more specific information about the event – e.g. manner, concomitant, or effect.

Quasi verb-adjunct constructions differ from true verb-adjunct constructions in that in the former the adjunct is an argument of verb whereas in the latter it is not. Quasi verb-adjuncts often contribute specific information about the instrument, location, or agent of an event.

Verb adjunct constructions are exemplified by (11)-(13). In these and later examples the verb adjunct and verb roots appear in bold type and the complex predicate is enclosed in square brackets.

- (3) *Sawan* [***guglum*** *ag-ig*] *k-j-a-p*.
Sawan ***snore*** *say-SS.SIM* ***sleep***-PRES.PROG-3SG
‘Sawan is asleep, snoring.’ (Pawley and Bulmer 2003:135)

- (4) *Yakt omay ok* [***gub*** *g-i*] *md-p-it*.
bird two the ***perching.together*** *do-SS.PRIOR* stay-PERF-3DL
‘The two birds are perched together.’

- (5) *Kuypep ognap* [***kosi•d*** *kn-b-ay*].
water-rat sometimes ***stacked*** ***sleep***-PF-3PL
‘Water-rats sometimes sleep piled one on another.’

- (6) *Yakt kotp kasek* [***gdey-bdey*** *g-ya-k*].
bird house quickly ***roughly.arranging*** *do-3PL-PAST*
‘They quickly built a roughly-constructed hide.’

Verb adjunct constructions closely resemble the compound verbs of Jaminjung,

- (i) they consist minimally of an uninflectable root or derived form, the verb adjunct, plus a verb root. The verb root is inflected except when the VAC functions as a non-final serial verb.
- (ii) a given verb adjunct occurs only, or primarily as the partner of one or a very few verb roots.
- (iii) The verb marks the phrase as denoting an event as being of a certain general semantic type and the verb adjunct that select that verb root specify particular subtypes. the verb carries a general meaning and the verb adjunct more specific meaning. Some verbs in VACs are light verbs, which contribute little to the meaning of the predicate but most have one of their usual lexical senses.

(iv) Usually the adjunct and verb root are contiguous but certain kinds of material may intervene, e.g. locative phrases, as in the final clause of (7), question words, as in (8), and modifiers and negators.

(7) *Tap tubtub-toktok wad g-i, [dad ms amn-a-k].*
 Things knick-knacks bag **do-SS-PRIOR** **carrying** outside **go-3SG-PAST**
 ‘Having put his personal effects in a string bag, he carried them outside.’

(8) *Pa-skoy [si etp-nen ag-a-k]?*
 girl-small **crying** what-for **say-3SG-PAST**
 ‘Why did the girl cry?’

Are verb adjuncts a distinct part of speech?

Verb adjuncts are sharply distinct from verbs. Verb adjuncts cannot take verbal inflections and cannot occur alone as the head of a predicate phrase. They differ from adjectives, which can freely modify nouns. Rather more problematic is the comparison with adverbs and nouns.

Verb adjuncts resemble adverbs in being modifiers of verbs. In fact, Schultze-Berndt (2000) treats adverbs in the north Australian language, Jaminjung, as a subclass of ‘coverbs’. However, Kalam verb adjuncts differ from typical adverbs in several respects: (a) adding an adjunct in some cases creates a complex predicate with a different argument structure from the verb root alone, whereas adverbs do not affect the valency of the predicate phrase, (b) an adverb can combine with many different verb roots whereas a verb adjunct can combine only with a very restricted set, (c) adjuncts can take at least some adjectival modifiers but adverbs cannot, (d) adverbs modify the verb qualitatively and in a general sense, e.g. for speed, intensity or purposefulness, whereas verb adjuncts modify the verb in a different way, typically specifying a particular kind of action, process or state that can be considered a subtype of the broader category of event specified by the verb, and (e) the scope of verb adjuncts is restricted to the verb, whereas adverbs may modify the whole VP.

Canonical verb adjuncts differ from nouns in that they are cannot be possessed or quantified and cannot be questioned, topicalised or relativised. However, verb adjuncts resemble nouns in that they can be modified by certain adjectives, such as *yob* ‘big, loud’ *ko^aay* ‘many’, *tmey* ‘bad, intensifier’, *naban* ‘very’ and in that they represent a propositional participant of a performance verb such as *ag-* SAY and *g-* DO, i.e. the adjunct represents something said or done. One has to say something and one has to do something. Thus in (4) *gub* ‘perching together’ is the action performed, and in (8) *si* ‘crying’ is the sound that is uttered even though neither verb adjunct has strong claims to be the direct object. In these respects they resemble incorporated objects in many languages, some coverbs of Jaminjung (Schultze-Berndt 2000:189-90) and, to some extent, nominals in Hindi complex predicates which serve both as predicates and as arguments (Mohan 1997).

Some classes of verb adjuncts and verb adjunct constructions

Verb adjuncts fall into a few large classes and many more minor classes according to their meaning and the classifying verb they select. Examples follow from the four largest classes:

(a) adjuncts which select *ag-* SAY, forming constructions which denote kinds of sound or sound-making.

(9) Some verb adjunct constructions containing *ag-* SAY

Verb adjuncts that select *ag-* almost all refer to kinds of noises, e.g.

asb ag- (begging say) keep asking for things to be given, beg constantly

<i>bu ag-</i>	(exploding say)	explode, burst
<i>gigu ag-</i>	(rattling say)	rattle, jingle
<i>gu ag-</i>	(resounding say)	resound, thud
<i>guglak ag-</i>	(croaking say)	croak
<i>guglum ag-</i>	(snoring say)	snore
<i>gullg ag-</i>	(rumbling say)	rumble, growl, as an empty stomach
<i>paj ag-</i>	(taunting say)	taunt or show pleasure to s.o., over their misfortune

(b) Adjuncts that selects a verb of locomotion, and forming constructions denoting manner, direction or concomitant of the actor's movement. The locomotion verbs that take the widest range of verb adjuncts are *am-* 'go' and *ap-* 'come, appear'. Some adjuncts also occur with *tag-* 'walk about, travel', *sa•d-* 'depart', *yap-* 'go down, fall', *tan-* 'go up, climb', *ju-* 'withdraw', *yok-* 'move away, be displaced'. Most verb adjuncts that occur with a verb of locomotion fall into one or another of the semantic categories shown in (10).

(10) Some verb adjuncts occurring with *am-* GO and other verbs denoting locomotion

1. Manner of actor's movement along a path:

<i>kle•d am-</i>	(crawling go),	'crawl'
<i>mumlokd am-</i>	(rolling, tumbling go)	'fall over, tumble down'
<i>pug-tkd am-</i>	(running go)	'run'
<i>tawd am-</i>	(stepping go)	'walk'
<i>wald am-</i>	(sliding, slithering go)	'slide, slither'
<i>wa•d am-</i>	(carried by water' go)	'float along'
<i>w•d am-</i>	(flying go)	'fly'

2. Direction of actor's movement in relation to path or deictic centre:

<i>gogeb-mageb am-</i>	(zigzagging go)	'zigzag along'
<i>koda•kodo• am-</i>	(hither and thither go)	'go hither and thither'
<i>pa•d am-</i>	(passing out of sight go)	'pass from sight (in the distance)'
<i>adkd am-</i>	(turning back, reversing go)	'turn back'
<i>skd am-d</i>	(entering go)	'enter, go in'
<i>tkd am-</i>	(crossing over go)	'cross over (a divide)'

3. Concomitant participant, manner of actor's association with another participant:

<i>dad am-</i>	(carrying go)	'carry s.th.'
<i>po•d am-</i>	(guiding, leading go)	'guide s.o., take s.o.. (to a place)'
<i>sb am-</i>	(brandishing go)	'go brandishing s.th. (usu. a weapon)'
<i>kosi•d am-</i>	(stacked, carried on the back go)	'go carrying s.th on the back'
<i>wtsek am-</i>	(chasing go)	'chase, pursue s.o.'

Adjuncts of type 3 are valency-changing, making the verb adjunct phrase transitive and introducing a patient or theme.

(c) A third class consists of adjuncts that select *d-* HOLD, forming constructions that denote an event where (a) the experiencer is seized by sudden involuntary bodily or emotional reaction, or (b) the actor comes to a sudden stop.

(11) Some verb adjunct phrases containing *d-* HOLD

(a) sudden involuntary reaction

<i>glk d-</i>	(startled hold)	be startled, taken by surprise
<i>jep d-</i>	(trembling hold)	tremble, shiver, quake
<i>llmag d-</i>	(twitching hold)	(of body part) twitch, have involuntary movements
<i>nab• d-</i>	(shame hold)	be ashamed, embarrassed
<i>ñawl d-</i>	(astonished hold)	be astonished by s.o.'s accusation or anger

(b) semantically diverse

<i>cci d-</i>	(crushing hold)	crush in the hands
<i>cebsogi d-</i>	(swoop.and.perching hold)	swoop down and perch
<i>j^a d-</i>	(sharp.pointing hold)	put a sharp point on s.th.
<i>kobti-spak d-</i>	(breaching hold)	cause a dam to burst
<i>kopag d-</i>	(coiling hold)	be coiled, twisted (as a rope)
<i>pte^ad d-</i>	(jumping.onto hold)	land after leaping, jump onto s.th.
<i>sb d-</i>	(trimming hold)	trim s.th, cut off unwanted parts

(d) The verb that takes the largest number of verb adjuncts is *g- DO*, the most general activity and process verb. Adjuncts that select *g- DO* generally denote either (i) the performance of an intentional act by an animate actor, (ii) a dynamic event attributed to an inanimate effector, or (iii) a state. Examples of verb adjuncts combining with *g-* are given in (12), with a division into four broad semantic and grammatical categories. Note that some verb adjunct phrases belong to more than one category, e.g. some adjunct phrases have both a transitive and a stative reading. Although *g-* is glossed as 'do' throughout, in some contexts the gloss might equally well be 'make' and in others 'be'.

(12) Some verb adjuncts occurring with *g- DO*

(i) intransitive VACs denoting the performance of intentional act by animate actor

<i>gsey-bsey g-</i>	(hurry-scurry do)	hurry, be in a hurry or rush
<i>gub g-</i>	(perching.together do)	(of birds) perch together
<i>jlan g-</i>	(nodding do)	nod the head rhythmically
<i>ñk g-</i>	(crouching do)	crouch, duck
<i>ññlo• ay g</i>	(pretending put do)	tease, pretend to do
<i>tob mogm g-</i>	(leg crossing do)	cross the legs (<i>tob</i> is a noun)
<i>wog-wati g-</i>	(work do)	do work of any kind

(ii) transitive VACs denoting the performance of intentional acts by animate actors

<i>amñeb g-</i>	(feinting do)	pretend to attack, feint
<i>bl g-</i>	(abstaining do)	abstain from an activity
<i>gadal-badal g-</i>	(criss-cross do)	lay things criss-cross or higgledy-piggledy
<i>gdey-bdey g-</i>	(rumble-jumble do)	do something roughly
<i>saj g-</i>	(compensation do)	pay compensation
<i>smen g-</i>	(bridewealth do)	give bridewealth
<i>mkal g-</i>	(open-hinged do)	open up something hinged
<i>tug cckoy g-</i>	(by.hand turning do)	turn s.th. round and round (by hand)
<i>onim g-</i>	(on do)	switch on (electric power)

(iii) intransitive VACs denoting acts by inanimate effectors

<i>gti•-gto• g-</i>	(ding-dong do)	make a lot of noise, make a din or racket
<i>gley-wley g-</i>	(clitter-clatter do)	rattle, clatter, as bones, metal objects
<i>godey-bodey g-</i>	(revolving do)	swing round, revolve like a propellor
<i>kopay-mopay g-</i>	(blowing.fiercely, do)	(of storm-winds) blow fiercely, rage
<i>kulpl g-</i>	(vibrating.loudly do)	vibrate loudly
<i>lm g-</i>	(shooting do)	(of plant suckers) shoot up, break the surface
<i>pbo• g-</i>	(hot do)	(of weather) be warm
<i>takl g-</i>	(cold do)	(of weather) be cold
<i>wnwn g-</i>	(peeling do)	(of e.g. bark) peel off, fall to bits
<i>ygen g-</i>	(wind do)	be windy, blow

(iv) intransitive VACs denoting states

<i>gadal-badal g-</i>	(criss-crossed do)	be higgledy-piggledy, criss-crossed
<i>gdey-bdey g-</i>	(rumple-dumpled do)	be in disarray
<i>gogeb-mageb g-</i>	(twisted do)	be twisted, crooked
<i>gutgat g-</i>	(drenched do)	be drenched and cold from rain or damp foliage
<i>kolkol g-</i>	(tangled do)	be tangled
<i>jl g-</i>	(loose-fitting do)	be loose, loose-fitting
<i>jspk-maspk g-</i>	(crunch-scrunched do)	broken into small pieces, crushed to bits

g- also occurs with many quasi verb adjuncts, noun-like elements, to form constructions which denote involuntary bodily and mental processes and states. Here the verb adjuncts exhibit some of the properties of subject NPs, and the experiencer is clearly the direct object.

(

Some combinations of quasi verb adjuncts + *g-* DO denoting involuntarily bodily and mental processes

(13) <i>glgl g-</i>	(shaking do)	tremble, shiver, have the shakes
<i>jel g-</i>	(afraid do)	be wary, afraid, nervous, apprehensive
<i>jep-ptpt g-</i>	(shivering do)	shiver, tremble, esp with fear
<i>kaj-knm g-</i>	(wincing do)	wince, shudder, on hearing a grating sound
<i>kalaw g-</i>	(numb do)	be numb, paralysed
<i>km g-</i>	(bitter do)	taste bitter, sour
<i>nab• g</i>	(shame do)	be ashamed, shy
<i>ñekñek g-</i>	(hiccup do)	have the hiccups
<i>llmag g-</i>	(terrified do)	be terrified, have one's hair stand on end
<i>slk g-</i>	(itching do)	be itchy, bitter, hot (to taste)
<i>tap g-</i>	(sickness do)	be sick
<i>wsb g-</i>	(sweat do)	sweat, be sweaty

True verb adjuncts form an open class which freely accepts borrowings. Almost all such borrowings (such as the verb adjuncts *wasim* 'wash', *onim* 'switch on', *opim* 'open', *statim* 'start' and *pasim* 'close, secure', from Tok Pisin) pair with *g-*.

Argument sharing in VACs

The combined arguments of certain VACs may exceed those of all of its constituent predicates. In (14) we find a verb adjunct *po•d* 'guiding, leading, accompanying (a person or animal)' paired with the verb *ap-* 'come'.

- (14) *Yad b tud nup kotp-cn po•d ow-n-k.*
 I man white him house-our **leading** come-1S-PAST
 ‘I’ve brought the white man to our home.’

Together these two elements create a three-place predicate. The adjunct contributes two semantic arguments: a guider (Actor, Subject) and a guidee (Patient, Object). The verb contributes two arguments, a comer (Actor, Subject) and a destination (Object). The comer and the guider are coreferential.

In (15) the adjunct *dad* ‘carrying (inanimate object)’ is paired with the verb *n-* ‘join (others on a trip, catch up with someone who has left’.

- (15) *Cn np mdak ayn-bogs dad n-ng g-p-un.*
 we you(Obj) later iron-box **carrying** join-SS.FUT. do--PF-1P
 ‘We will join you later bringing the metal trunk.’

Together they create a three-place predicate. The adjunct *dad* contributes a carrier (Actor), Subject) and a thing carried (Patient, Object). The verb *n-* contributes a joiner (Actor, Subject) and a joinee (Patient, Object). The carrier and the joiner are coreferential. In (21) the thing carried ranks as the Direct Object and the person joined as the Indirect Object.

5.2 Kalam serial verb constructions.

5.3.1 General characteristics

Serial verb constructions figure more prominently in Kalam than verb adjunct constructions. Kalam SVCs provide an efficient, streamlined mechanism for depicting certain kinds of event sequences or overlapping event clusters using a single clause structure. Their grammatical and semantic structure has been described in some detail elsewhere (Lane 1991, Pawley 1987, 1991, 2004, in press, Pawley and Lane 1998) and Givon (1990, 1991) has demonstrated that SVCs, in contrast to clauses ending in verbs of full or medium finiteness, almost always occur under a single intonation contour.

The lexical nucleus of a SVC consists minimally of a *verb (root) series*, in which one or more bare verb roots precedes an inflected verb root. In some kinds of SVCs other material may intervene between verb roots but never a conjunction. Typically all the verbs share the same subject and the argument structure of the complex predicate does not exceed that of its constituent verbs. There is no grammatical limit to the number of verb roots that can occur in sequence in a SVC. In practice the limit seems to be about nine. Sequences of six or seven are fairly common..

- (16) *Am mon d ow-ngp-ay.*
go wood **get** come-FUT-3PL
 ‘They will fetch the wood.’

- (17) *Basd skop ...am kmn pak d ap ad ñb-elgp-al,...*
 grandfather distant **go** animal **kill** **get** **come** **cook** **eat**-PAST.HAB.3PL
 ‘Our distant ancestors... used to hunt [lit. go, kill, bring back, cook and eat] game mammals,...’ (*kmn* are the larger marsupials and arboreal rodents, which men hunt)

Compact vs narrative SVCs. An important distinction is between SVCs of the **compact** the **narrative** types. (van Staden and Reesink (2004), writing of languages of the New Guinea

area in general, make a similar distinction between what they call *component serialisation* and *narrative serialisation*..)

5.2.2 Compact SVCs

These are conceptually and grammatically tight-knit, each component event being an essential part of the whole. No non-verb material can occur within the verb series and the scope of negation and modifiers is over the whole verb series. Examples are

- (a) sequences of locomotion or transport + directional verbs, e.g. those whose meanings are equivalent to English *go in, go out, fall down, withdraw, and pass from sight*,
- (b) sequences that denote transporting or moving something along a path, e.g. functional equivalents of *bring, take, fetch, push, pull, drag*,
- (c) sequences of transitive + intransitive verb denoting an action that changes the state of the affected object, e.g. functional equivalents of the transitive verbs *rub off, clean, throw away, open, close, split, shatter, extract*,
- (d) sequences of action verb + perception verb, denoting events of testing or experiencing, e.g. functional equivalents of the transitive verbs *taste, feel (by touching), and try on (clothing)*.

In comparative terms, the meanings conveyed by Kalam SVCs of the types (a)-(d) are unremarkable. In virtually every language meanings of these sorts are represented by a simple or complex verb.

They can be divided into many types on grammatical and semantic grounds. There is space only for a few examples here.

(18) Some same-subject verb series denoting the actor's movement along a path

<i>am jak-</i>	(go reach)	arrive at, reach (a far place)
<i>ap jak-</i>	(come reach)	arrive (hither)
<i>ap tan jak-</i>	(come climb reach)	rise to the top (as water in a container)
<i>ju ap-</i>	(withdraw come)	emerge, come out
<i>ju am-</i>	(withdraw go)	retreat, emerge and depart
<i>ju yap-</i>	(withdraw descend)	drop out of position, withdraw downwards
<i>tan am-</i>	(ascend go)	climb up
<i>ap tan ap yap-</i>	(come ascend come descend)	go back and forth, go up and down
<i>tan ap tan ap yap-</i>	(ascend come ascend come descend)	climb up and down
<i>sak am-</i>	(break.through go)	break through and escape (as water from a dam)
<i>sa•d am-</i>	(pass.beyond go)	go out of sight, pass beyond a distant point
<i>ptk am-</i>	(take.fright go)	flee, run away in fear
<i>ap yap pk-</i>	(come descend hit)	fall down
<i>am pk-</i>	(go hit)	lose consciousness and fall down, faint
<i>pug ju pk-</i>	(break withdraw hit)	come out and fall, as a tree in a storm

(19) Some verb series denoting testing events, with *n•*- PERCEIVE/KNOW

<i>ay n•-</i>	(put perceive)	try to fit s.th., try s.th. on (e.g. clothing)
<i>ñn ay n•-</i>	(hand put perceive)	feel inside s.th., grope
<i>d n•-</i>	(touch perceive)	feel s.th. by touching (deliberately)
<i>ñb n•-</i>	(consume perceive)	taste s.th.
<i>pk n•-</i>	(hit perceive)	feel s.th. by touching, nudge
<i>pu•i n•-</i>	(pierce perceive)	probe, test by probing
<i>tb n•-</i>	(cut perceive)	make a trial cut
<i>wk n•-</i>	(burst perceive)	test by cracking open

<i>ag n●-</i>	(say perceive)	ask, enquire, ask for, request
<i>ap n●-</i>	(come perceive)	visit s.o., come and see s.o.
<i>piow n●-</i>	(search perceive)	search and find, find what one is looking for
<i>tag n●-</i>	(travel perceive)	sightsee, travel and see
<i>taw tag n●-</i>	(tread walk.about perceive)	test (ground, branch etc.) by treading

Perception events such as seeing, hearing, thinking and dreaming, which do not require the perceiver to perform a prior activity, are typically expressed by quasi verb-adjunct phrases.

Different-actor SVCs. In different-actor SVCs the final verb has a different actor from the preceding verb(s). However, unlike true switch reference constructions, which are multi-clause constructions, change of grammatical subject is not marked in the different-actor SVCs. Instead, the last two verbs in the SVC are treated as a compound transitive verb, with the agent of the transitive verb marked as subject. Change- of-actor SVCs usually express a cause-effect sequence of sub-events.

(20) **Some Kalam verb series with change of logical subject**

<i>ag yok-</i>	(say displace)	send s.o. away, dismiss s.o.
<i>d yok-</i>	(hold displace)	throw s.th.
<i>pk lug yok-</i>	(strike slide displace)	brush or sweep s.th. away
<i>pk cg-</i>	(strike adhere)	stick s.th. on, cause s.th. to adhere
<i>pk ju-</i>	(strike withdraw)	knock s.th. out of position
<i>pk sak-</i>	(strike break.off)	knock (a piece) off
<i>pk sug-</i>	(strike extinguished)	put out (a fire)
<i>pk wk-</i>	(strike shatter)	knock s.th. to bits, shatter s.th.
<i>pug sug-</i>	(blow extinguished)	blow out (flame)
<i>pu●i ask-</i>	(pierce be.open)	prise s.th. open
<i>pu●i lak-</i>	(pierce be.split)	split s.th. by wedging or levering
<i>pu●i md-</i>	(press stay)	stick s.th. in position
<i>tb yok-</i>	(cut displace)	cut s.th. away or out
<i>sog ask-</i>	(pour free)	pour until empty, drain s.th.
<i>su ju-</i>	(bite withdraw)	extract s.th. by biting, bite s.th.out
<i>su pag yk-</i>	(bite broken be.open)	bite s.th. (and break it) open
<i>taw pag yok-</i>	(tread.on broken displace)	break off by pushing with the foot
<i>tb kluk yok-</i>	(cut gouge displace)	gouge out (the centre of s.th.)

Narrative SVCs are syntactically and semantically more complex than compact SVCs. Whereas compact SVCs are V-serialising, narrative SVCs are VP-serialising. The semantic character of narrative SVCs is quite different from the word-like character of compact SVCs. Narrative SVCs are designed to tell a story consisting of several stages. The semantic content of narrative SVCs is shaped by discourse structure conventions, specifically the rules for constructing well-formed reports of an episode, a sequence of related events.

A well-formed report of a deliberate, purposeful action, such as gathering firewood, digging in the garden or planting a crop should mention not just the central action but a sequence of associated happenings. You don't just get firewood, or dig in the garden, or plant

crops you do such things for a purpose. There must be a resolution, an outcome. And in many cases the actor has to perform some preparatory activity, even if this is only going from home to the scene of the main action. Thus, the report normally consists of an orientation, a complicating action and a resolution. The orientation is often minimal because the participants and setting have already been established earlier in the discourse or by the external situation. However, the complicating action may be quite elaborate. For this class of activities a well-formed report should at least answer the questions.

1. Did the actor move to the scene of the pivotal action or was s/he already there?
2. What was the pivotal action? If there was a targeted object, was this obtained?
3. Did the actor then move on to another place and if so, did s/he take along the targeted object with him?
4. What was the outcome, e.g. was the search abandoned, what was done with the transported object?

The major conceptual parts of a minimal well-formed report of a deliberate action event sequence are summarised in (21):

(21) Formula for minimal well-formed report of a deliberate action episode

1	2	3	4
MOVE TO SCENE/STAY	PIVOTAL ACTION	TRANSPORT OF AFFECTED OBJECT	RESOLUTION

Such a report may be distributed over several clauses may be distributed over many clauses or a few clauses. If certain conditions are met the report may be compressed into a single SVC, with some or all of the four major conceptual elements or stages of the narrative represented by a verb root or a verb series. Let us call the material representing a separate stage a phrase. For a sequence to qualify as a narrative SVC there must be at least two phrases present, e.g. 1 + 2, 2 + 4, 2 + 3, 3 + 4. If all four conceptual elements are not present in the SVC it does not mean the missing elements have been left out of the event report as a whole. It merely means that these elements appear in separate clauses.

(22) Formula for minimal well-formed report of a gathering event episode

1	2	3	4
MOVEMENT TO SCENE	GATHERING ACTIVITY	TRANSPORT OF GATHERED ITEMS	DISPOSAL

Some lexicalised verb series denoting gathering events.

(23)a.) *am* + [*mon*] *puk* + *d ap* + *agi kn-*
 go +wood gather + hold come + ignite sleep
 'fetch firewood for the night'

b. *am* + [*mon*] *puk* + *d ap* + *ay-*
 go +wood gather + hold come + put
 'fetch firewood and store it'

c. *am* + [*as*] + *yg pk* + *d ap* + *ad ñ•-*

go + small.mammals + dig hit + hold come + cook eat
 ‘go and dig for (small animals), kill, bring, cook and them

d. *am* + [kmn] *pk* + *d* *ap* + *ad* *ñ•*-
 go + game.mammal hit + hold come + cook eat
 ‘go and kill game and bring and cook and eat them

e. *am* + *al•awkab* *tk* + *d* *ap* + *ad* *ñ•*-
 go + pandanus nut pick + hold come + cook eat
 ‘go and pick pandanus nuts (and bring and cook and eat them

5.3 Frequency. In a text count of 800 verbal predicates, 75 percent consisted of simple verbs, 19 percent were serial verb constructions and only six percent of phrases were true verb adjuncts. However, a qualifier must be added. Quasi verb-adjunct phrases were not counted because these generally consist of a verb plus one or more arguments and as such are not readily distinguishable from free expressions with the same structures. The total of all types of verb-adjunct phrase will thus be more than six percent but it is unlikely to be as much as 10 percent.

6. Do Kalam and Jaminjung complex predicates do similar kinds of work?

6.1 Similarities. There is a strong family resemblance between the ‘compound verbs’ of Jaminjung and some other north Australian languages and the ‘verb adjunct constructions’ of Kalam and its relatives.

Both Kalam and Jaminjung use verb adjunct constructions/compound verbs to code events whose components are neither discrete nor sequential. VACs can be subclassified into fairly systematic semantic classes according to the meanings of the verb adjuncts and the inflecting verb. Several of the semantic classes of VACs match quite closely across the two languages, e.g. there are classes representing (a) mode of movement along a path (*crawl, run, jump, swim, fly*), (b) internal (fixed base) movements (*shiver, sway, shake, lean, stretch*), (c) noise-making events, where a particular kind of sound is produced: *laugh, cry, squeal, croak, thud*, etc., (d) events where the actor performs a specific activity, e.g. *working, weeding, crushing, paying compensation, pretending to attack*, and (e) events where the actor assumes a particular posture. It is also noteworthy that in both languages the verb adjunct category includes a number of expressive or ideophonic elements.

Schultze-Berndt (2000:551-52) comments cautiously on this resemblance, with specific reference to the category that she calls ‘coverb’ and which I prefer to call ‘verb adjunct’. In both Jaminjung and Kalam this ‘other category’ is a major part of speech in addition to nouns, verbs, adjectives and adverbs. In both languages many members of this class correspond, semantically, to prototypical verbs, but others correspond to nouns, adjectives or adverbs. The coverb category in Jaminjung encompasses a somewhat wider range of semantic types than the corresponding category in Kalam. This discrepancy need not invalidate ‘verb adjunct’ as a candidate for a cross-linguistic grammatical category. It is notorious that languages vary in the semantic range of the major part of speech categories that we confidently label ‘noun’, ‘verb’ and ‘adjective’.

Verb adjunct is a category with fuzzy boundaries both in Jaminjung, where there is overlap between adjectival nouns and stative coverbs, and in Kalam, which shows a continuum between ‘true’ verb adjuncts and ‘quasi’ verb-adjuncts. Quasi verb-adjuncts are nouns or noun-like elements that in the same clause can serve as an argument of the verb and as a verb adjunct in a complex predicate. This sort of mismatch between different layers of

grammatical and semantic structure is characteristic of complex predicates, a point made by a number of contributors to Alsina et al. (1997). In particular, Mohanan (1997) speaks of one type of Hindi NV complex predicates as having a complex argument structure but behaving syntactically as a simple predicate.

6.2 Differences. Kalam uses a wider range of complex predicate types than Jaminjung to represent types of events. The most important distinction in Kalam is between serial verb constructions (SVCs) and verb adjunct constructions (VACs). There is a clear semantic basis to the distinction. Prototypical SVCs encode a *sequence of discrete events that make up a conceptual whole*, with the order of verb roots isomorphic with the order of conceptual events. Verb-adjunct constructions are used to denote a different class of verbal meanings from those represented by SVCs. If we operate with the principle that two semantic elements in a construction count as separate events only if (a) they are represented by separate formal elements, and (b) they refer to acts (processes, states) that are conceived of either occurring in sequence or as being separate acts, prototypical VACs denote a *single conceptual event which is broken down into two primary semantic components standing in a generic-specific relation*.

In the case of Jaminjung it is not possible to draw a neat line between a type of complex predicate used to represent sequences of events and another type used to represent single events that are decomposable into generic and specific components. Jaminjung lacks serial verb constructions. It compensates by using VACs to represent certain kinds of complex events which in Kalam would be expressed by SVCs, including (a) sequences of two discrete events, (b) successive phases of a process performed by the same actor, e.g. *causing, beginning, ending, extending*, and (c) discrete sub-events that overlap in time, e.g. *rising up noisily, or making a sound while collapsing*.

Events where the actor expels a tangible bodily product, e.g. *defecate, urinate, vomit, lay an egg*, are typically depicted in Jaminjung using a VAC. In Kalam, however, most such events are expressed by a direct object + generic verb construction, where at least some of the N + V sequences have claims to be considered a quasi VAC.

7. Comparisons with English

We have seen that Jaminjung and Kalam share certain characteristics apart from English in their grammatical and semantic apparatus for talking about events. However, all three languages show certain striking similarities in regard to the frequency and meaning of particular concepts expressed by inflecting verbs.: The fact that three unrelated languages exhibit strikingly similar patterns in the frequency of particular sorts of verbal meanings suggests that some universal principles constraining language organisation and change are at work. It follows that that event-classifying languages should not be regarded as especially exotic. They merely exploit to an extreme degree features of the semantic organisation and grammar of predicates that are present, but less developed, in many if not all open verb class languages.

8. On the origins of small, closed verb classes

There are logical grounds for thinking that closed verb class systems where all or almost all the verbs have grammaticalised (such as some languages of north-west Australia (McGregor 2002) have developed from systems with predominantly event-classifier verbs.

But how do languages come to have a small, closed class of verb roots in the first place? A necessary condition is to have a set of high frequency verbs with general meanings. The

power of these verbs is that they are always available for forming periphrastic predicates, which can then be in competition with synonymous simple verbs. However, as all languages appear to have such verbs this condition is not sufficient. The evidence to hand suggests a couple of more diagnostic preconditions, namely that a language should have a class of verb adjuncts, and use some verb roots as event classifiers of these adjuncts. This is a tradeoff step, because it allows a large class of verbal predicates to be formed using a small number of generic verbs.

How might languages come by such a verb adjunct category? One route, it seems, is by reclassifying some unmarked nouns as adjuncts. Haig (2002) notes a bundle of four structural features that correlate with the development of N + V complex predicates in Iranian and Indo-Aryan: (a) OV word order, (b) lack of morphological means for deriving verbs from nouns, (c) zero-marking of direct objects, (d) lack of obligatory articles. To these might be added (e) the restriction of certain nouns to co-occurrence with a very few verbs, initially on semantic grounds (cognate object nouns are an example). All these features apply, more or less, to those TNG languages which have defective nouns acting as quasi verb-adjuncts.

A second possible pathway – one that would allow for verb roots to be turned into verb adjuncts – is by reanalysing certain existing serial verb constructions. Take an SVC of the sort that Durie (1997:336) calls ‘manner serialisation’, in which the roots denote sub-events that are (a) non-consecutive or temporally overlapping, and (b) where the first verb specifies the specific manner in which the second verb is performed, denotes as in *crawl come* ‘come crawling’, *walk follow* ‘follow on foot, walk after’. If the language already has some verb adjunct constructions in which a class of uninflected roots (say, of the noun or adjective type) are classified by a generic verb, the stage is set to reinterpret certain conventional manner SVCs as verb-adjunct phrases, with the initial bare verb root in the series treated as just another verb adjunct in partnership with a generic verb.

Possession of a sizeable verb adjunct category is, of course, no guarantee that a language will develop a closed class of verb roots – certain Indo-European languages, especially in the Indo-Iranian group, appear to have developed something like a class of verb adjuncts while maintaining an open class of verb roots. Having a large verb-adjunct category merely takes a language one step closer.

NOTES

1. It has long been recognised that most verb meanings lend themselves to phrasal expression and that, as a consequence, languages can be constructed that make do with only a few verb roots. When C.K. Ogden selected the lexicon of Basic English he included only 18 simple verbs: *be, come, do, get, give, go, have, keep, let, make, may, put, say, seem, send, take* and *will* (Ogden 1930). The list of 60 or so semantic primitives which Wierzbicka and Goddard posit as the basis of their universal defining language (Goddard and Wierzbicka 1994, Wierzbicka 1996) contains about a dozen primitives that correspond to meanings typically expressed by verbs in natural languages. There is just one primitive denoting speech (SAY), three denoting existence or life (THERE IS, LIVE/ ALIVE and DIE), six ‘mental predicates’ (SEE, HEAR, THINK, KNOW, WANT, FEEL) and three denoting other actions and events (DO, HAPPEN (TO), MOVE). The list also includes some other primitives that are realised as verbs in some languages, including NOT, CAN, BECAUSE, SAME, LIKE (resemble), OTHER, GOOD, BAD, BIG, and SMALL. It is noteworthy that only three or four of the verbs in Ogden’s list (*be, do, go, say*) have approximate counterparts in Wierzbicka and Goddard’s.

Kalam Pandanus language has only about nine verb root forms, which allowing for some homophony probably represent 12 distinct morphemes. All the verb roots are used independently but are also used extensively in combination with verb adjuncts. The verb roots have the following basic meanings or macro-senses: MOVE (go, come, walk about, climb, depart, arrive, jump, etc.), DO (do, act, make, work, cause, build, create, etc.), HAPPEN (function, occur), STABILISE (put, place, plant, (take) form, become, be, live, stay, sit, lie, sleep, etc.), BREAK (DESTABILISE IN FORM) (bend, fold, collapse, fracture, chip, smash, etc.), CONTROL (hold, have, get, carry, stop, manipulate, etc.); FREE (untie, remove, open, extract, cut off, avoid, make a hole, etc.), SOUND (speak, say, sing, cry, groan, rumble, crackle, explode, etc.), HEAT (ignite, burn, cook, etc.), PERCEIVE (see, hear, feel, know, think, etc.), TRANSFER (give, connect, buy, sell, exchange, etc.), CONTACT (hit, press, poke, copulate, shoot, etc.).

2. Key to abbreviations used in glosses			
		PF	perfect (denotes today's past, present perfect or present-iterative)
D	dual		
DS	different Subject (from following verb)	PAST	remote past (yesterday or earlier)
DUR	durative	PAST.HAB	past habitual
FUT	future	PRIOR	prior or preceding (the event denoted by following verb)
HORT	hortative		
I	Instrument	REC	recent past
IMM	Immediate past	PROG	present progressive
L	Locative	S	singular
lit.	literally	SIM	simultaneous (with the event denoted by following verb)
NDR	noun derivative suffix	SS	same Subject (as following verb)
Obj	Object (case)		
OPT	optative	Subj	Subject
P	plural		

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