A language which defies description by ordinary means

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> "Everyone who is master of the language he speaks ... may form new ... phrases, provided they coincide with the genius of the language."
> (Michaelis, *Dissertation* 1769).[1]

1. Introduction

This paper puts forward a few ideas about what it takes to know a language and how this knowledge squares with what linguists put into their grammars and dictionaries.

When in the passage cited above, Michaelis spoke of a person mastering "the genius of the language", I take it he meant acquiring what might be called *idiomatic competence* – knowing how things are said by native speakers, not just grammatically but idiomatically or normally. The question is: How can we enrich conventional descriptive models to enable linguists to provide rigorous accounts of idiomatic competence?

Much of the discussion will centre on a single New Guinea Highlands language, Kalam.[2] In this language verb stems are a closed set, consisting of about 100 members. Speakers rely heavily on a small subset of these, termed here "generic verbs": 15 generic verbs account for 89 percent of all verb occurrences in text; 35 generic verbs account for 98.6 percent of all verb tokens. Several prominent design features of Kalam seem to be connected with this reliance on a small stock of verbs, including the following:

(a) Kalam speakers are markedly more analytic and explicit than speakers of European languages in their reporting of the action components of events.

(b) More than 90 percent of conventional expressions for actions and processes are phrases or multi-clause expressions. The final element in such phrasal expressions is usually a generic verb.

(c) Serial verb constructions abound. Sequences of five or six verb stems in a row are relatively common. The following sequence of nine verbs is a conventional expression which translates roughly as 'to massage':

(1)

pk	*wyk*	*d*	*ap*	*tan*	*d*	*ap*	*yap*	*g-*
strike	rub	hold	come	ascend	hold	come	descend	do

(d) If we exclude serial verb constructions (whose syntactic status is controversial) there is usually a low density of information per clause. It often takes several clauses to translate a single English clause.
(e) Lexical verbs do some of the work of marking grammatical functions, e. g., of case relations, causation and aspect.

In spite of these structural constraints and exuberances, the Kalam manage to talk about their own world about as economically as English speakers do theirs – if economy is measured in terms of the time or number of phonemes needed to say things, rather than in terms of the number of morphemes or clauses.

The anthropologists and linguists who began studying this language in the early 1960s were English speakers familiar mainly with Indo-European and Austronesian languages. To us Kalam seemed much more exotic than any Austronesian or Indo-European language. We marveled at its modes of expression as Benjamin Lee Whorf had once marveled at those of Hopi and Nootka.

During the mid-1960s I tried to capture the genius of Kalam and squeeze it into standard jars labeled "syntax", "lexicon" and so on – with little success. To put matters more prosaically, I was unable, using a conventional grammar-lexicon model, to describe rigorously certain key features of the language. Shortly I will take up the question of which features of the language defied description and why. These concerns will lead to others of broader scope: What does idiomatic competence in a language consist of? Are linguists better equipped now than 25 years ago to describe languages?

I hope the reader will bear with me while I first provide some basic information about Kalam, recount my early struggles and frustrations with the language and recall the intellectual climate in which these took place. Eventually I arrived at a rather different view of how languages are organized and how descriptions should be evaluated from the one I first took to the field.

1.1 First encounters with Kalam

The 15,000 or so speakers of Kalam live around the junction of the Bismarck and Schrader Ranges, on the northern margins of the central Highlands of Papua New Guinea. Most of the Kalam reside in dispersed homesteads at altitudes of between 1500 and 2000 metres on the steep slopes of the upper Simbai, upper Kaironk, Kaiment, Asai and Aunjang Valleys. Although they hunt and gather food in and around the mountain forests and keep livestock, the population lives chiefly on the root crops they plant. Sweet potato is the staple but taro and yams, together with pork, are the prestige foods at the large dance festivals held between August and October, which are the major ceremonial occasions each year.

There is considerable regional variation in the language. The two main dialects, *Etp mnm* and *Ty mnm*, differ substantially in lexicon and in morphophonemics, though not in grammatical and semantic categories, syntax or discourse structure.

Kalam has only one close relative, Kobon, spoken in adjoining regions of the Schrader Ranges. The external relationships of this pair of languages remain uncertain. Chiefly on typological grounds, Wurm (1975) and his associates have classified them (along with Ganj) as a branch of his East New Guinea Highlands Stock, which in turn they assign to a Trans New Guinea Macrophylum embracing most of the 700 or so Papuan (i. e., non-Austronesian) languages of New Guinea. Foley (1986) prefers to reserve judgment on the unity of these putative higher-order groups, noting that extensive borrowing among non-Austronesian New Guinea languages makes it extremely hard to determine their remote genetic relationships.

First European contacts with the peoples of the Kaironk and Simbai Valleys occurred in the 1950s. In 1960 study of the language, society and folk biology of the Kalam of the upper Kaironk was begun by Bruce Biggs and Ralph Bulmer of the Anthropology Department, the University of Auckland. Since then research on the Kalam and their environment has been carried on intermittently by a number of scholars, including Dr Ian Majnep Saem, a native speaker of the language.[3] I took part in the second Auckland field trip in 1963–1964 with the assignment of writing a grammar of Kalam and helping to compile a dictionary. I returned to the upper Kaironk in 1965, 1969, 1972 and 1975, spending a total of 12 months there as well as substantial periods working with Kalam speakers in Auckland in 1965, 1977 and 1988. My grammar of the Etp mnm

dialect was presented as a doctoral thesis in 1966. A draft dictionary treating both major dialects was completed some years later (Bulmer and Pawley 1970–74).

1.2 Background notes on Kalam phonology and grammar

The following information about Kalam phonology and grammar will help the reader to pronounce the illustrative sentences given later and will clarify the glosses. Unless otherwise noted, data cited here are from the Etp mnm dialect as spoken by the Kaytog territorial group in the upper Kaironk Valley. Occasionally material is cited in the Ty mnm dialect as spoken by the Gobnem and Skow groups of the upper Kaironk.

1.2.1 On pronunciation and orthography

The following is a list of the segmental phonemes of Kalam and a rough indication of the pronunciation of each.

Consonant allophones (excluding the consonant release vocoid)

	Word-initial	Medial	Final
Oral obstruents			
p	[Φ]	[β]	[p] or [b]
t	[t]	[ř]	[ř]
c	[č]	[č]	[č]
s	[s]	[s]	[s]
k	[k]	[ɣ]	[k]
Prenasalised obstruents			
b	[mb]	[mb] or [mp]	
d	[nd]	[nd]	[nt]
j	[ňj]	[ňj]	[ňč]
g	[ŋg]	[ŋg]	[ŋk]
Resonants			
m	[m]	[m]	[m]
n	[n]	[n]	[n]
ñ	[ñ]	[ñ]	[ñ]
ŋ	[ŋ]	[ŋ]	[ŋ]

l	[ɬ]	[ɬ]		[ɬ]
w	[w]	[u]	/C_C	[w]
y	[y]	[i]	/C_C	[y]

There are three vowel phonemes, *a e o*, realized as [a], [e] and [o], respectively.[4]

Many words contain no phonemic vowels. Consonant phonemes standing alone or before another consonant in a word are released with a predictable epenthetic or transitional vowel, e. g., *wsn* [wusín] 'sleep'; *ytk* [yirík] 'forest'; *mlp* [milíp] 'dry'; *gpnp* [ŋgiβiníp] 'I might have done'; *mdnknŋ* [mindiniɣiniŋ] 'while I was staying'.

In words consisting of a single consonant other than a palatal, the release vowel is a very short stressed [ə́], e. g., [mbə́] 'man'. In the context C_CVC it may be a very short, unstressed near copy of V or a short, unstressed central or high central vowel, e. g., *mlep* 'dry' (Ty mnm dialect) is [meɬé·p] or [miɬé·p]. Elsewhere before and after *y* the epenthetic vowel is usually [i] and elsewhere before and after *w* usually [u]. In most other contexts the release vowel takes the form of a very short high central vowel [ɨ].

Word stress falls on the final (phonemic or phonetic) vowel of phonological words.

1.2.2 Base classes

Bases (roughly, free forms that may stand as the nucleus or head of a word or phrase) may be divided in the first place into verbs and nonverbs. Verbs have complex and highly distinctive morphology (see 1.2.4). There are many nonverb classes, but with the exception of locatives, all have simple morphology.

1.2.3 Generic and specific verb stems

Verb stems are (in synchronic terms) a closed class, with about 120 recorded members. Whereas many new nonverbs have been borrowed into Kalam from other languages since 1960, no new verb stems have been added.[5]

A subset of verb stems, roughly 35 in number, are central to the organization of Kalam discourse. I will refer to these verb stems as "generic verbs" because they have broad meanings and because 99 percent of complex expressions for acts, processes and states have a generic verb

as the final constituent. In contrast, "specific verbs" have narrower meanings and play a much lesser role in discourse.[6]

The most important generic verbs are listed below. It will be seen that in many cases there is no English verb with quite the same semantic breadth. English glosses accompanying verbs in Kalam sentences tend, therefore, to be misleadingly narrow.

Some generic verbs:

ag- 'make a sound: emit, resound, speak, etc.'

am- 'move, go, go away, flow, etc.'

ap- 'come towards a point of reference or into awareness: come, appear, emerge, be suddenly evident, etc.'

ask- 'free something from or avoid constraint: release, clear (empty of contents, free from encumbrance), leave (an activity, topic), undo, untie, loosen, abandon, distribute (ritually restricted goods), be in an avoidance relationship with something'

ay- '(cause something to) become stable or fixed in form or condition: put, place, set, form, become, turn into'

d- 'control, constrain: hold, obtain, get, get, touch, handle, catch, seize stop, cease, complete something'

g- '(cause to) do, act, occur, happen, function, work; make, cause'

kn- 'lie down, sleep, remain overnight'

jak- 'attain an elevated or distant position: rise, stand up, be up, elevated, sprout, arrive, attain, reach, etc.'

md- 'exist, be alive, live, stay, dwell, be located at, remain, continue, persist'

nŋ- 'perceive, sense, be aware, conscious: see, hear, know, think, understand, imagine, smell, feel, etc.'

ñ- 'transfer control of something (to something), bring something into close-fitting contact (with something): give, transfer, transmit, reposition, connect, fit, apply or put on (e.g., makeup), close (a door or lid), etc.'

ñŋ-, ñb- 'consume: eat, drink, smoke, inhale, suck in, bite something'

pag- 'have its proper or resting shape abruptly altered: break (intransitive), collapse, shatter, be disturbed, fold, bend, buckle, be dented, chipped, undulate, ripple, etc.'

pk- 'contact, touch, hit, knock, nudge, slap, kick, etc. something'

pwŋy- 'penetrate or impinge forcefully on a surface (object: the surface): poke, pierce, stab something, insert, plant, thrust in or on a place, fix in position, (subject: a plane or bird) land or come to ground, (subject: a boat) run aground.

tag- 'travel, go on an excursion, go about, return from a distant place'

tk- (1) 'cause or cross a hiatus, pass from one state or side to another: cross (a divide), sever, separate, interrupt, cut off, transform, suddenly become (night, day, clear), etc.'
(2) 'make a mark or a line, draw, tattoo, write'
(3) '(subject male or female) have a child'

yap- 'pass below a point of reference: descend, fall, drop, sink, go down, etc.'

yok- 'force something away from its usual or secure position: remove, displace, dislodge, dislocate, throw, propel, get rid of something, put something out of place, send away, banish, etc.'

(N. B. In Ty mnm dialect *ay-* is *l-*, *nŋ-* is often *n-* or *ng-* and *pk-* is *pak-*.)

1.2.4 On verb morphology

Morphologically and syntactically verbs are well-marked. Verb stems are the only part of speech to carry suffixes marking modality (tense, aspect, mood), subject person-and-number and subject identity (same or different as next independent verb). 1st, 2nd and 3rd singular and plural are regularly distinguished, while in the dual the distinction is between 1st person and 2nd/3rd person.

Verb stems occur either inflected or bare (uninflected) (see 1.2.6).

Inflected verbs are either independent or dependent. Independent verbs are marked for tense, aspect or mood, and subject reference independently of any other verb. Dependent verbs are marked for relative tense and relative subject reference, i. e. relative to the next independent verb in the construction. Dependent verbs may also be marked for absolute tense, aspect or mood.

Absolute tense-aspects and their basic markers include remote past (*-k*); remote past habitual (*-ygp-* in Etp mnm dial., *-elgp-* in Ty mnm); recent past perfect (*-ab-* in Etp mnm, *-esp-* or *-osp-* in Ty mnm); perfective-recent past-present habitual (*-p-*, *-b-*); present progressive (*-sp-* or *-jp-* in Etp mnm, *-eb-* in Ty mnm); future (*-ng-*); immediate future (*-ngsp-*); as well as various contrasts marked by combinations of bare verb stem plus inflected aspectual verb, e. g., completive (*V d-*); present progressive completive (*V d-sp-*); immediate future completive (*V d-ng-sp-*); persisting (V *md-*), etc.

The main relative tense markers include the following three which indicate *same subject* reference:

Action prior to independent verb (abbreviated as SS PRIOR), marked by *-y* (Etp mnm dialect) or *-l* (Ty mnm).

Action simultaneous to independent verb (SS SIM), marked by *-yg* (Etp mnm) or *-elg* (Ty mnm).

Action future to independent verb (SS FUT), marked by *-ng*.

These suffixes may occur without further specification for person-and-number, as in (2) below. There is no grammatical limit to the number of same-subject dependent verbs which can precede an independent verb.

(2)

am-y,	*ap-y,*	*wog*	*g-ng,*
go-SS PRIOR	come-SS PRIOR	work	do-SS FUT
ag-p			
say-PERF-3SG			

'He said he will work when he gets back.' (literally 'Having gone, having come, will do work, he said')

Two suffixes mark a *change of subject* in the following verb (switch reference) as well as tense relative to that verb:

Action prior to independent verb by different subject (DS PRIOR) is indicated by *-e-* or certain morphological variants.

Action simultaneous to independent verb by different subject (DS SIM) is marked by *-nŋ*.

Verbs marked for switch reference are always marked for person and number of the immediate subject.

(3)

an	*ag-e-k*	*g-a-k?*
who	say-DS PRIOR-3SG	do-3SG-PAST

'Who told him to do it?'

Mood contrasts include hortative (zero plus imperative intonation), optative (*-n-*) and contrary to fact (*-p-* ... *-p* or *-b-* ... *-p*). Mood markers may combine with absolute and relative tense and relative subject markers.

1.2.5 On clause structure

A clause or simple sentence consists minimally of an inflected verb, i.e., a verb stem plus suffixes marking modality and subject reference (see 1.2.5). A clause may also contain one or more nominals expressing core

and peripheral case relations. However, it is unusual for more than two nominals to occur in a clause. For subjects and direct objects the usual word order is SOV,

(4) *b kaj ñb-sp-ay*
man pig eat-PRES PROG-3PL
'The men are eating pork.'

although OSV is preferred in expressions about involuntary bodily processes:

(5) *yp ywan g-p*
me hunger act-PERF-3SG
'I feel hungry.' (literally 'Hunger acts on me')

(6) *yp sŋl ay-p*
me boil form-PERF-3SG
'I have a boil.' (literally 'Boil forms on me')

Locative phrases may follow or precede the verb. All other nonverb elements precede the verb.

1.2.6 Serial verb constructions

Bare verb stems occur in serial verb constructions (SVCs), where one or more such stems precedes an inflected verb (with or without intervening nominals and modifers), as in example (1) above. Certain types of SVC normally occur under a single intonation contour, without internal pause. Other types are often broken into more than one contour. A string of bare verb stems without any intervening material is termed a serial verb string (SVS). Serial verb strings are usually spoken without perceptible internal pause (Givón 1990).

In the following sentence the first five verb stems (*am*, *pk*, *wk*, *d*, and *ap*) are bare and the sixth (*ay*) is inflected (*pk* + *wk* coalesce as *pwk*). One nominal breaks up the string: *mon* 'wood', the direct object of four of the verbs that follow.

(7) *b ak am mon p-wk d ap ay-a-k*
man that go wood hit-break get come put-3SG-PAST
'The man fetched some firewood.'

There is no grammatically definable limit to the number of verb stems that can occur in an SVC or SVS. The following formula, in which X denotes a non-subject argument or modifier, V a bare verb stem and V-INFL the inflected verb, summarizes the above-mentioned characteristics of a large class of SVCs.

(8) (SUBJ) (X_i) V_i (... V_n) V-INFL

In typical SVCs all the verbs refer to the same subject. That subject is specified only once if at all by an NP. However, in at least certain subtypes of SVS the initial verb stem can take different non-subject arguments and modifiers from those belonging to the inflected verb (Lane 1991).

1.2.7 Where have all the verbs gone?

How do Kalam speakers cope, with only 100 or so verbs? Is it possible that they make do with a very small vocabulary of terms for actions and processes?

Not at all. Far from skimping on the details of actions and processes, Kalam discourse seems to an English speaker to be unnecessarily, almost obsessively, analytic about such matters. In Section 4 I will look at what counts as a well-formed event description in Kalam. But first let us consider certain action and process concepts that one expects to be denoted by lexemes in all languages, such as those represented in English by 'see', 'hear', 'smell', 'taste', 'speak', 'laugh', 'cry', 'bring' and 'take', and see how Kalam speakers treat them.

Typically, such concepts are expressed in Kalam by complex expressions, exemplified by (9)–(12). The expressions are of various structural types, but nearly all consist of a generic verb preceded by one or more verb stems and/or one or more nominal or adverbial complements. To clarify the structure of certain expressions I have added SUBJ for "subject nominal", and OBJ for "direct object nominal" in the positions where these nominals are usually inserted, and have marked off embedded clauses by square brackets and labeled them. Clear cases of conjoined clauses are separated by comma.

(9) Some expressions with *nŋ-* 'perceive' as final verb.

OBJ	*wdn*	*nŋ-*	'see something'
	eye	perceive	

SUBJ [SUBJ *ag*-INFL] *tmwd* *nŋ*- 'hear something'
sound ear perceive

SUBJ [SUBJ *kwy* *ap*-INFL *nŋ*- 'smell something'
odour come perceive

gos *nŋ*- 'think, know'
mind/thought perceive

wsn *nŋ*- 'dream, have a dream'
sleeping perceive

OBJ *gos* *tep* *nŋ*- 'approve, like, admire something'
thought good perceive

OBJ *gos* *tmey* *nŋ*- 'dislike, hate something'
thought bad perceive

OBJ *ñb* *nŋ*- 'taste something'
consume perceive

OBJ *d* *nŋ*- 'feel something (by touching)'
touch perceive

(10) Some expressions with *am*- 'go' and *ap*- 'come':

OBJ *d* *am*- 'take something'
hold go

OBJ *d* *ap*- 'bring something'
hold come

am OBJ *d* *ap*- 'fetch something'
hold go come

OBJ *dad* *am*- 'carry something'
carrying go

OBJ *kby* *am*- 'leave, abandon something'
leave go

kleŋd *am*- 'crawl'
crawling go

paŋd *am*- 'disappear'
out of sight go

OBJ *poŋd am-* 'guide, lead something'
leading go

wsn kn am- 'go to sleep, drift off to sleep'
sleeping recline go

ptk am- 'flee'
fear go

(11) Some expressions with *ag-* 'make a sound, utter':

mnm ag- 'speak'
speech utter

kmap ag- 'sing'
song utter

swk ag- 'laugh'
laughter utter

gwglwm ag- 'snore'
snoring utter

sb ag- 'fart'
bowel utter

tmwd ag- 'thunder'
thunder utter

esek ag- 'lie'
false utter

nŋd ag- 'tell the truth'
truth utter

OBJ *ag ask-* 'refuse, reject something'
say avoid

OBJ *ag ay-* 'confine or order someone to stay'
say stabilize/secure

mnm ag ask ay- 'leave or avoid (a topic)'
talk say avoid stabilize

OBJ *ag ñ-* 'tell, inform someone'
say transfer

(12) Some expressions with the preverbal adjunct *sy* 'illegally, without permission' (SUBJ always precedes *sy*):

sy	*d-*	'steal'
illegally	get	
sy	*am-*	'trepass'
illegally	go	
sy	*bsg-*	'steal someone's seat'
illegally	sit	
sy	*md-*	'squat, live in a place illegally'
illegally	stay	
kmn *sy*	*ñag-*	'poach (game, by shooting)'
game illegally	shoot	
kmn *sy*	*pk-*	'poach (game, by hand-capture)'
game illegally	hit	
mgn *sy* *d*	*aŋ-*	'commit adultery, fornicate (of a male)'
vagina illegally take	copulate	
waŋ *sy* *d*	*aŋ-*	'commit adultery, fornicate (of a female)'
penis illegally take	copulate	

Such complex expressions can therefore be classified in terms of the generic verb they select. Those expressions ending in *nŋ-* denote perceiving processes, those ending in *ag-* denote sound-making processes, those ending in *ay-* denoting stabilizing processes, and so on.

1.2.8 A note on phrases equivalent to English nouns

Kalam has a fair supply of nominal morphemes – several thousand of them. However, there are no simple nouns for some conceptual categories which one might expect to be universal, such as those roughly translated by 'person, human being', 'parent', 'child', 'ancestor', 'enemy', 'rain', 'thirst'. It is not that these concepts are nameless in Kalam, but the names for these (and many other concepts) are of the following kind.

(13) *byn-b* 'people'
woman-man

ñ-pañ 'children'
son-daughter

aps-basd 'grandparents'
'grandmother-grandfather'

aps-basd *skop yes* 'distant ancestors'
grandmother-grandfather group remote

kaj-kayn-kobty 'large animals'
pig-dog-cassowary

kmn- *as-* *kopyak* 'furry animals'
game mammals small edible furry animals rats

The strategy is to form a generic nominal by stringing together the names of some or all of (the most salient) members of the class, normally without intervening pause or intonation juncture. The resulting expression is a true nominal compound because the constituents stand in a coordinate relation. There seems to be no grammatically definable limit to such strings. The Kalam compounds can be compared with such English collocations as *brothers and sisters*; *men, women and children*; and *sheep and cattle*, which is some contexts are pragmatically equivalent to and may be preferred to the single word labels *sibling*, *people* and *stock*.

Another strategy for forming familiar expressions equivalent to English generic nominals is to use a clause with the verb marked for one of the habitual tenses, as in:

(14) *byn-b penpen ña-p-ay*
people reciprocally shoot-HAB-3PL
'enemies' (i. e., 'people (one) fights with/used to fight with')

(15) *tp tap taw-p-ay*
place goods exchange-HAB-3PL
'market' (i. e. 'place where goods are exchanged')

(16) *ap tan ap yap g-p-ay tam*
come ascend come descend do-HAB-3PL junction
'crossroads' (i. e., 'junction of where they come up and go down'; remember that the Kalam live on mountain slopes)

Such clauses and nominalizations are inserted in just the kinds of syntactic contexts where English would use a noun, as in:

(17) *kañm ak [byn-b penpen ñag-ygp-m]*
banana that people reciprocal shoot-PAST HAB-2PL
dad o-p-ay
carry come-PERF-3PL
'the bananas which your former enemies have brought'

1.2.9 Use of verbs to mark "grammatical" relations

Kalam general verbs do much of the work performed in many languages by specialized functor morphemes, e.g., marking certain case relations, aspect and cause. In those cases where grammatical functions of the verbs are distinct from their normal, lexical functions, this aspect of Kalam could be described effectively in terms of clause grammar. It should be emphasised, however, that in most cases the "grammatical" uses of verbs are not distinguishable, semantically, morphologically or syntactically, from the "lexical" functions. A few examples are given in the following paragraphs.

Instrumental relation. An "instrumental event" (in which an instrument is used to carry out an action) is normally phrased in terms of at least two verbs, the first specifying the taking or holding of the instrument and the second what is done with it. If the action results in a change of state, that requires another verb. The instrumental verb is most often *d-* 'control, hold, etc.'

(18) *kwt d-y nwp pk-p-yn*
stick hold-SS PRIOR him hit-PERF-2SG
'I hit him with a stick.' (lit. 'I took a stick and hit him')

(19) *b tw d-y mon tb lak-p*
man axe hold-SS PRIOR wood cut split-PERF: 3SG
'The man split the wood with an axe.' (i.e., 'the man took an axe and cut and split it')

Benefactive or dative relation. The transfer or transmission of something to a beneficiary or receiver is normally expressed by the verb *ñ-* 'give, etc.' The semantic range of this verb included that of 'for' and dative 'to' in English. Reports of benefactive events, in which something is done for someone, sent or told to someone, or transferred to something, typically consist of at least two verbs or clauses, the first specifying the preliminary action, the second the transfer.

(20) *nwk nwp ag ñ-a-k*
she him say transfer-3SG-PAST
'She told him.'

(21) *Wkeŋ pas Ralph-nwp tk ñ-a-k*
Wkeŋ letter Ralph-him mark transfer-3SG-PAST
'Wkeŋ wrote a letter to Ralph.'

Locative relation. The verb *md-* 'stay, exist' does the work, in some contexts, of English locative and genitive markers.

(22) *Kyas kotp-nwk md-yg, wog g-sa-p*
Kyas house-his stay-SS SIM work do-PRES PROG-3SG
'Kyas is at his house working.'

(23) *yad [Wŋnn md-p] am-jp-yn*
I Wŋnn stay-PERF 3SG go-PROG-1SG
'I'm going to Wŋnn's (place).'

Aspectual functions. Several generic verbs perform aspect-marking roles as the final element in serial verb constructions. *md-* 'exist, live, stay, etc.' marks persistence or continuation (more emphatic than the progressive suffix *-sp-*); *d-* 'control, hold, obtain, etc.' marks an actor-oriented completive (more emphatic than the perfect suffix *-p-*), i.e., the actor has finished his action. *ay-* 'stabilize, form, set, etc.' marks an emphatic patient-oriented completive, i.e., the effect of the action or process on the patient is complete or permanent.

There are many recurrent serial verb sequences translatable by an English phrase of the form verb plus adverbial particle or verb plus adjective of result, illustrated in (24). The English glosses often give the impression that the nucleus of these expressions is the first verb, and that the final verb functions more as an aspectual modifier, indicating a natural extension of the action: its completion, result, direction of movement, etc. In most cases, this interpretation is merely an artifact of translation. The final verb is the main verb in such constructions. It carries the inflections and indicates the final action in a series.

(24) *pk ask-* 'knock something free, clear a thing by hitting it'
hit free

pwŋy ask- 'prise something free'
insert free

tb ask- 'cut something free'
cut free

pk yok- 'knock something away or off, remove it by hitting'
hit displace

tb lak yok- 'split something off'
cut split displace

ñag jw yok- 'rout (the enemy) in war'
shoot withdraw displace

pk yk- 'knock something open, open it by striking it'
hit open

tb yk- 'cut something open'
cut open

pwŋy pag yk- 'prise something open or free'
impinge disturb open

2. On parsimonious grammars and lexicons

My thesis satisfied the examiners. It proceeded according to the canons of the time, treating the phonology, morphology and some aspects of the syntax in some detail. But I knew that it failed to record some of the most distinctive and quintessential characteristics of the language. The analysis did not give the reader much idea of how the Kalam actually say the kinds of things that they say. The most productive patterns for reporting events and situations, for instance, were not distinguished from those patterns that were grammatical but unidiomatic.

I felt a similar feeling of dissatisfaction with our early drafts of the dictionary. Many of the concepts most frequently used by Kalam speakers were not mentioned in it – because they were expressed by well-formed strings. While I could give a rough informal account of the missing ingredients, I did not know how to formulate them systematically. Indeed, there seemed to be no place for them in a generative grammar.

A training in structural linguistics had taught me to regard a language as a code for pairing signals (forms, expression) with meanings (content).

The descriptive linguist's task is to crack the code and describe it, paying particular attention to its formal structure. Structuralists retained the traditional view that the essence of any language (apart from its phonology) can be described in terms of a grammar and a lexicon. Having compiled both grammar and dictionary, the structural linguist feels he is entitled to say "I have described the language. Here it is, in these two volumes". Grace (1981: 16) speaks of this as the grammar-lexicon model of language.

Of course, standards of analysis and ideas about what precisely should be included in a grammar and lexicon had changed over the years. Structural linguists, keen to make their discipline an empirical science, focused on those aspects of language that are most amenable to objective and systematic study, beginning with observable regularities in speech and informants' judgments obtained under controlled conditions. As to the grounds for choosing between competing analyses, structuralists were generally agreed that precision, economy, generality and predictive power were important criteria.[7] Bloomfield's *Language* adumbrated a view of the relationship between grammar and lexicon that I will refer to as the *parsimonious grammar-lexicon model* of language. Basic to this model are the assumptions (i) that the grammarian always has to choose between treating a given bit of linguistic material as a product of (synchronic) grammar and treating it as part of the lexicon and (ii) that grammar is concerned with productive processes and the lexicon with what is left. Thus, for Bloomfield (1933: 274) the lexicon was really an appendix to the grammar, "a list of basic irregularities", consisting of that set of meaningful elements that have defeated our attempts to extract grammar from them. Such a minimalist lexicon would treat a much narrower range of form-meaning pairings than conventional reference dictionaries do, listing only those pairings which are not predicted by the rules of grammar.

I will speak of proponents of this view as "parsimonious grammarians" or "parsimonious lexicographers".

The striving for more precise and predictive linguistic descriptions led to early and classical transformational generative grammar (e. g., Chomsky 1957, 1965). In classical generative grammar we find perhaps the clearest formulations of the parsimonious grammar-lexicon model. A generative grammar should specify the structure and form of all and only the grammatical strings in a language and assign a meaning to these. The productive syntactic rules should apply to a list of lexical items, the lexicon, which contains all and only the unpredictable form-meaning

pairings (Bloomfield's "irregularities"). What counts as unpredictable or irregular, and therefore as lexical, and what counts as the simplest overall description are matters which are theory-dependent (cf. the lexicalist–transformationalist debate arising in the late 1960s).

Under the heading of evaluation procedures, Chomsky and his associates also dragged into the open and extended the role of native speakers' knowledge (see Note 7). They argued that a description should be a theory of native speakers' competence, of their tacit knowledge of linguistic categories and rules. The best description is that which best fits the total range of evidence concerning the organization of this tacit knowledge in the mind, including evidence of universal principles of linguistic structure. Evidence was brought forward supporting the view that the native speaker's knowledge of phonological and grammatical rules is often more abstract than was generally assumed by post-Bloomfieldian structuralists. In practice, choice between competing analyses of equal predictive power continued to be made very largely in terms of the traditional aesthetic criteria of economy and generality rather than on any profound understanding of how human minds actually organize information.

Also part of my conceptual baggage at that time were several other assumptions about language universals. For example, I assumed that much the same kinds of things should be sayable in verbal clauses in all languages. All languages should have a large class of verb bases (a lexical category) identifiable by their occurrence in certain distinctively verbal (grammatical) frames. Verbs and their case frames (as they later came to be called) should form the nucleus of a well-defined verbal clause structure. The types of meanings carried by verbs and by case markers should be roughly comparable across languages.

Both structuralist and transformational grammarians accepted that grammatical descriptions should be form-based. It was understood that a grammarian's first duty is to define what is grammatical. The description should first specify those strings that are grammatically well-formed independently of their meaning, instead of first specifying well-formed semantic structures and then associating these with forms. A grammarian need not be concerned with which strings make sense, and which are idiomatic or pragmatically acceptable in particular social or discourse contexts.

Making grammar form-based and restricting semantics to a secondary (non-generative) role has certain practical advantages. A form-based grammar can be treated (largely if not wholly) as a system of rules

independent of (a) semantic well-formedness; (b) idiomaticity; and (c) cultural knowledge and beliefs. Whereas semantic well-formedness – what kinds of things make sense to say – cannot, except in a very limited way, be treated independently of belief systems, of knowledge of language users' worlds and habits (e.g., Haiman 1980). The same applies to idiomaticity. In order to know, say, that the word *ununderstandable* is a less idiomatic way of expressing a certain meaning than *not understandable* or *incomprehensible*, we have to be able to detach what is said from the way that it is said. A description of idiomaticity has to specify the meanings that are sayable independently of form. Essentially the same problem arises with idiomatic translation. It is not possible to hide from this challenge behind the credo that there is no such thing as absolute synonymy. In the early 1960s most grammarians preferred to give semantics a wide berth, except where it impinged directly on the resolution of a problem of syntactic analysis.

These, then, were the ideas abroad in linguistics when I first tackled Kalam.

My faith in the autonomy of syntax was sustained at first by the reactions of my Kalam informants. For example, certain informants quickly grasped the distinction between ungrammatical and nonsensical strings and enjoyed constructing hypothetical sentences and correcting my grammar (*Mnm sketk apan!* 'Your utterance is crooked!'). But as I have said, my parsimonious description seemed to miss out many other distinctions that were important.

Some years later, after the dust had settled on the 1960s, the nature of the problems with Kalam became clearer. They had less to do with the idiosyncracies of Kalam than with my terms of reference – the view of language and of the goals of language description that I brought to the task of language description. The fact is that many of the same problems of analysis are exhibited by every language to some degree. In the case of, say, Indo-European languages, they are obscured by other conspicuous features of the grammatical and lexical landscape that have by long tradition engaged the attention of grammarians and lexicographers. If one is a European linguist describing most European languages (not all: German with its penchant for compounds is surely an exception), it is easy to overlook or ignore the problem areas without feeling that one has missed half the language. In Kalam, however, these features are so prominent that it is impossible to ignore them. I turn now to a selection of these.

3. On the limitations of a parsimonious lexicon

Discovering where all the "missing" verbs and nouns had gone was no great problem. They had gone to complex expressions every one (see 1.2.7 and 1.2.8). My problem, as a parsimonious grammarian, was how to handle the thousands of Kalam complex expressions that are everyday conventional expressions (many of which happen to have single word translations in other languages). Should these familiar expressions be listed in the dictionary? Or should they be regarded simply as products of the rules of syntax, as "free expressions", no different from millions of other actual and potential strings?

It was tempting to classify all such conventional expressions as "idioms" and therefore as lexical items. However, only a small minority are idioms in the classical sense – non-literal expressions or irregular formations. Most are literal expressions, syntactically and semantically well-formed. The fact that certain phrases are translatable by a single word in English no doubt qualifies them for inclusion in a bilingual dictionary intended for practical purposes, but here we are concerned not with translation equivalence but with "the lexicon" as a component of a generative grammar.

Thus, the Kalam phrases in (25), which it happens can be given one word translations in English, are no more idiomatic than those in (26), which cannot:

(25)

tap ñŋ-	'eat'
food consume	
ñg ñŋ-	'drink'
water consume	
cgoy ñŋ-	'smoke'
tobacco consume	
ty ñŋ-	'suckle, suck at the breast'
breast consume	

(26)

kaj ñŋ-	'eat pork'
pig consume	
yakt magy ñŋ-	'eat eggs'
bird egg 'eat'	

(The rules of syntax allow any noun to occur as the direct object of *ñŋ-* 'consume'.)

It is reasonable to ask if the Kalam phrases in (11)–(18) and (25) are frozen expressions, not open to the same range of syntactic processes that apply to non-lexicalised phrases made up of the same types of constituents. The short answer is no: only a small minority of Kalam conventional expressions are frozen. We will return to this point later when discussing serial verb constructions.

Grammarians, even those of parsimonious persuasion, sometimes speak of a phrase as "lexicalized" if it happens to be institutionalized among language users as "the name" of a concept X, "the term for X", "what one calls X", "a word for X" and so on – in contrast to phrases which are unconventional or merely descriptive. While I will ultimately defend such a treatment as reasonable, it should be understood that this use of "lexicalized" is quite different from that which is required in a parsimonious grammar-lexicon model. Indeed, it implies a radically different view of the goals of linguistics from that generally taken by generative grammarians.

Readers may recall that in the early days of transformational grammar, generativists were reluctant to treat familiar complex noun phrases as lexical items. For example, Lees (1966) faulted the attempts of Jespersen and others to distinguish nominal compounds from free expressions, first on that grounds that the distinction cannot be made in a precise way, and second on the grounds that it is not the business of linguistics to make such distinctions: "[T]here simply is no neat physical or semantic criterion for compounds, ... there need not be any such, ... and the point of linguistic research is to find grammatical descriptions, not to classify physical or semantic 'objects' (Lees 1966: xxiv)."

To a true parsimonious grammarian, then, a complex expression is a lexeme only if it has an irregular grammar. The notions "name" and "term" have no place in a syntax-based grammar, belonging rather to the realm of social and cultural knowledge and custom. The same can be said of "conventional (or standard) expression" and "common usage". That *truck driver* is a conventional expression in 20th century English, while *cloud driver* and *computer driver* are not, is a social fact, and has nothing to do with the structure of English. All three compounds have the same structure and all are formed by a productive rule. Therefore none can be considered a lexeme.

Nor does being syntactically bound, acting as a single constituent under certain syntactic processes, have any necessary connection with

lexemic status. The parsimonious grammarian's lexemes are not to be confused with words, or with word-like syntactic constituents. In languages with productive word-formation processes, words, like sentences, are an indefinitely large set (Keyser and Postal 1976).

Most Kalam conventional phrases must therefore be excluded from the parsimonious grammarian's lexicon. Idioms aside, the grammar will not distinguish them from other possible strings with the same constituent structure. The only trouble with a such a description is that it gives an absurdly impoverished account of the lexical resources of the language. I will return to this point in Section 6.

4. Formulas for reporting events: limitations of a syntax-based grammar

4.1 Action events

We now come to Kalam conventions for reporting events — a domain which brings together many of the concerns touched on in this paper. I will use "event" both in its everyday "objective" sense of a bounded happening and in the "subjective" sense of a person's conceptual construction or perception of what happened. "Report" (or "event-report") is used here to refer to any verbal act specifying the details of an event, e. g., "mention", "describe", "predict", "ask about", etc.

The special features of Kalam event-reports first surfaced as a language learning difficulty. I had been living in the Upper Kaironk for a couple of months and had learnt to converse, hesitantly, about a range of familiar subjects. I noticed that bystanders, who were fond of repeating to others nearby what I said (even if the others could hear perfectly well), often added details to my utterances. For instance, if someone asked, "Where's Kiyas?" (the young man who was my chief informant) and I answered, "He's in his garden", a bystander might say, "He said 'Kiyas has gone to Matpay to work in the garden. He'll be back later', he said".

After a while it dawned on me that these elaborations were not just imaginative creations of individuals but followed a consistent pattern. People were editing my utterances, supplying information that I should have given in the first place in order to make my utterance complete

or well-formed. But what kind of information? Well-formed in what sense?

English speakers giving minimal report of deliberate action events prefer a more metonymic strategy, mentioning only one of the component acts and only mentioning other activities if something noteworthy was associated with them. Consider the replies to Alf's question in (27):

(27) Alf: *What did you two do this morning?*
Bill: *I went to the supermarket.*
Jill: *I played a round of golf.*

Unless something unusual occurred, Bill does not need to say what he did after going to the supermarket (bought supplies, brought them home, put them away). Jill does not need to say that she first went to the golf course or that she went home afterwards. Gricean principles apply. Speakers say enough to get the meaning across but not too much.

What counts as enough or too much in an event-report? Given a universe of discourse in which certain things are significant, or potentially significant, the following principle seems to apply in English discourse (excluding special types) to the reporting of stages of an event (sub-events): only unpredictable outcomes or stages need be mentioned. If someone reports an act of searching for a child, the audience wants to know whether or not the child was found. If a baseball commentator remarks that a pitch has been thrown, the audience craves knowledge of the outcome: did the batter swing? Did he make contact? If not, was the ball a strike? etc. What counts as a well-formed or complete report is partly a matter of shared knowledge about the structure of that world (e.g., searching events, baseball games), including the predictability of outcomes.

The information added by my Kalam "editors" was not usually material required by the autonomous rules of clause or sentence structure. Nor was it usually new information, facts which my interloctors did not know already or could not work out from the context and knowledge of the world (they were able to supply the missing material). The extra information usually consisted of details about the actor's movements to and from locations, prior to or after the act I had described. It turned out that I had been wrong to assume that English and Kalam speakers follow exactly the same principles in deciding what needs to be mentioned and what can be left out in order for an event-report to be complete. Compare the following Kalam interchange with its pragmatic English translation:

(28) A sees B return home after an absence of an hour or so.

A: *nad etp g-ab-an o-p-an?*
you what do-RECENT PAST-2SG come-PERF-2SG
'What have you been doing?'

B: *am wog-day okok kpl*
go garden here and there weeding
g-ab-yn o-p-yn.
do-RECENT PAST-1SG come-PERF-1SG
'I've been weeding in the garden.'

In English, in reply to a question such as A asks, it is enough to say what one has been doing, or if the location 'speaks for itself', to say where one was. In Kalam one does not let the location speak for itself in this discourse context, and one should, as a rule, supply certain information about previous and subsequent acts. A well-formed report of a deliberate action event should, generally, indicate the following information:

(29) 1: Whether or not the actor had to move from his previous location (scene 1) to the scene of the action(s) (call it scene 2).
2: What he did at scene 2. If his action was aimed at obtaining something, whether or not he obtained it.
3: Whether or not he moved from scene 2 to another location (scene 3) and whether or not he carried the object obtained in 2.
4: What he did with the object obtained at scene 2 (or if transported, at the scene 3).

Why do the Kalam consistently mention certain sub-events that are routine components of an event, such as outcomes that are predictable in the normal course of affairs? I hesitate to say that Kalam event-reports are not constructed on Gricean principles. One might argue that the Kalam crave knowledge of actors' comings and goings because these things are more significant in the Kalam world, for whatever reason. But I am doubtful about that explanation. Arguably, some requirements of discourse structure, like some syntactic conventions, are arbitrary conventions of a language. Compare the obligatory marking of tense-aspect and definiteness in English discourse. The Kalam emphasis on explicitly stating movements to and from, etc., may well be related to the reliance

of a small number of verbs. Reporting complex events in terms of component events is often necessary, just as it is sometimes necessary to specify the time of an action. A response to a periodic need may grow into a preference and then into a fixed habit or rule.

From the foregoing account the reader may think that event-reports in Kalam are usually long and cumbersome. But such is not the case. Discourse rules interact with clause and interclausal syntax to give streamlined formulas which allow various types of events to be reported in a standard and efficient way. The formulas may require mention of some details that English speakers leave out, but the reverse is also true (subject and object nominals are generally dispensible). (30) summarizes the formula for reporting an event in which the actor goes gathering or collecting things (whether by picking up, cutting, hunting, etc.). The numbers 1–4 correspond to the conceptual elements in (29).

(30) Minimal formula for "gathering events":

1	2	3	4
MOVE/STAY	(OBJ) V_2	((CARRY) MOVE(-INFL))	(V_5) V_6-INFL

The gathering formula, like other deliberate action formulas, consists basically of a sequence of verbs, with or without arguments, conforming in syntactic structure to the rules of serial verb constructions and clause linkage.

(30) is a general formula, specifying the minimal lexical content of a well-formed report. When the membership of its lexical constituents (and some other structural information) is added, the formula is a mini-generative grammar, specifying a large number of different strings and representing a wide range of conceptual events.

Each constituent expressed in (30) by a capitalized English verb represents a small, semantically-defined class of verb stems. The single letter, V, represents a larger or semantically more heterogeneous class of verb stems. Constituent 1 may be realized by a verb of movement, usually *am-* 'go'; *ap-* 'come' or *tag-* 'travel'. Or it may be realized by a verb denoting no movement, usually *md-* 'stay, live' or *kn-* 'sleep'. V_2 specifies a step in obtaining the goods, e.g., *pk-* 'hit, kill'; *tk-* 'cut'; *ñag-* 'shoot'. CARRY is often realized by *d-* 'get, obtain'. In constituent 3, MOVE is usually *ap-* 'come' (referring to the actor's return home or to camp), but it may be another verb indicating movement to a different distant location. V_5 and V_6 refer to what was done with the goods – either at the scene of constituent 2 (if there was no movement) or after they were transported

to the scene of constituent 4. Further specification of the lexical content of constituents 5 and 6 can be made if we know what goods were gathered. For instance, if the goods are edible, V_5 is likely to be *ad-* 'bake' or *kab agy-* 'make an earth oven' and V_6 is likely to be *ñŋ-* 'consume'.

INFL denotes an inflectional ending marking either relative or absolute tense and relative or pronominal subject reference. If constituents 3 and 4 are both present, MOVE in 3 will usually be marked for 'prior action by same subject'. OBJ refers to the direct object of V_2.

There are also many more specific gathering formulas, subtypes of (30), in which the sequence of verb stems is defined more narrowly

(31) 'Harvesting pandanus nuts' formula:

1	2
MOVE/STAY	CUT PANDANUS NUTS
3	4
CARRY COME (INFL)	(COOK EAT-INFL)

(32) 'Fetching firewood' formula:

1	2	3
GO	BREAK WOOD	CARRY COME
	4	
	(PUT/MAKE FIRE-INFL)	

(33) 'Hunting game mammals' formula:

1	2	3
MOVE/STAY	KILL GAME	((CARRY) MOVE)
4		
(COOK (EAT)-INFL)		

Such relatively complex formulas are often realized in discourse by a standard sequence of no more than 8 or 9 syllables, spoken in a one to two second burst. What is surprising to an English speaker is that the formula remains intact both when a speaker refers to a complex event as a whole and when he wishes to focus on just one or two of the components events. For example, in the narratives in Majnep and Bulmer (1990) the entire 'hunting game mammals' formula (33) is consistently used not only when the narrator is talking in a general way about the hunting of game mammals but when he is specifically focusing on the bringing of game to ritual camp-sites or to the cooking and eating of the game. (34) and (35), both in Ty mnm dialect, illustrate. In (34) the narrator is mainly

concerned with the fact that the ancestors used to transport game to the ritual enclosures for cooking and consumption.

(34) *...sblam mgan kn-l kmn pak d*
cordyline enclosure sleep-SS PRIOR game kill carry
ap ad ñb-l, ap-elgp-al
come bake eat-SS PRIOR come-PAST HABITUAL-3PL
'Having slept in the cordyline enclosures, they used to bring the game they killed to cook and eat (there).'

In (35) the narrator's concern is rather with the cooking and eating of the game after it had been brought to the cordyline enclosures.

(35) *...kab g ñb-l, sblam tk ym*
oven make eat-SS-PRIOR cordyline cut plant
g-e-te-k. ...sblam yb ak
do-DS PRIOR-2PL-PAST cordyline true that
mey, kmn ak pak dad
aforementioned game that kill carrying
apl ad ñb-al ak
come-SS PRIOR bake eat-PERF 3PL that
'They made ovens with heated stones ... and planted cordyline, the real cordyline, the one used (in ovens) when game mammals are cooked and eaten, after being killed and carried (to the enclosures).'

The difference in focus is indicated not by omission of components or by reordering them, but by adding modifying material to certain constituents which either subordinates these constituents or elaborates on their meaning.

4.2 Involuntary bodily processes

I will briefly discuss one other class of formulas whose syntactic structure is partly determined by subject-matter.

When speaking of bodily sensations and processes the Kalam make a basic distinction between two types: those that are (at least partly) voluntary or controllable by the experiencer and those that are involuntary. Normal word order in Kalam is SOV. In reports of involuntary

processes, however, the unmarked word order is OSV, where O is the experiencer, S the thing experienced (call it the condition) and V is a verb specifying how the condition manifests itself.

(36) Formula for involuntary bodily processes:
EXPERIENCER CONDITION V-INFL

For example:

(37) *tob-yp ywwt g-p*
foot-my pain act-PERF: 3SG
'My foot hurts.' (literally 'pain acts on my foot')

(38) *yp swk ow-p*
me laughter come-PERF: 3SG
'I felt like laughing.' (literally 'laughter came to me')

(39) *Yalk dsn nwp jak-p*
Yalk beard him grow-PERF: 3SG
'Yalk has (grown) a beard.' (literally 'beard grows on Yalk')

When speaking about involuntary bodily processes the standard SOV order is grammatical but unidiomatic. There are scores of specific formulas for particular bodily processes, and in each the selection of verb associated with a particular condition is highly constrained. The constraints are chiefly semantic, e. g., all stable, externally visible conditions, such as boils, sores and warts are said to 'form' (*ay-*) on the experiencer and all internal sensations are said to 'act' or 'work' (*g-*) on the sufferer. But certain choices are semantically arbitrary, i. e., one of two semantically appropriate verbs is preferred; the choice may be said to be a matter of common usage (idiomaticity).

4.3 Where do productive formulas fit in a generative description?

My impression is that Kalam speakers use thousands of specific formulas and scores of general formulas. In this respect Kalam surely resembles every other language. To know what kinds of things (meanings) are normally said and how these things are said in any language (or indeed in any specialised universe of discourse), one needs to know not just the

words and grammar but the formulas for talking about particular subject matters and for performing particular sorts of speech acts. But in the 1960s I had no idea where an account of such knowledge might be fitted into a formal description.

I now believe that each general and partly-specified formula is a kind of mini generative grammar. However, the form and content of formulas such as (30) cannot be described satisfactorily in a syntax-based grammar, for several reasons: (i) the syntactic structure of any formula, e.g., the order of constituents, is bound to, and partly determined by knowledge of a particular subject-matter or universe of discourse; (ii) some of the individual constituents are semantically determined, i.e., bound to a particular set of lexical meanings; and (iii) the particular form-meaning pairing(s) are a social institution in the community, closely, even uniquely associated with a familiar pragmatic function, e.g., they may be the normal way of reporting a particular kind of kind of event, favored over competitors (other pairings allowed by the rules of autonomous syntax and semantics) for the same function.

Formulas, then, are systems of knowledge that bind together pragmatic knowledge (of a world and discourse about that world) with semantic, syntactic and idiomatic-stylistic knowledge, and in which the pragmatic and semantic elements are primary. A generative grammar of a formula, like a translator, will, presumably, have to start with the things that are said and proceed to the way they are said.

5. Where have all the clauses gone?

5.1 On the function and structure of clauses

We turn now to Kalam clauses, which also packed a few surprises.

Just as I had expected much the same types of action and process concepts to be encoded by verbs in all languages, so I assumed that all languages will have clauses or simple sentences of broadly similar structure and function, designed to report a fairly similar range of events and situations. Languages may differ in word order, in the division of labour between morphology and syntax, and in the details of grammatical categories, but there should be certain constants in clause structure: (i) There should be a division of labour between (lexical) bases, which can stand alone as the heads of phrases, and (grammatical) functors, which

cannot; (ii) This division should correspond roughly to a division between elements carrying referential meaning, e. g., denoting actions and participants, and those doing grammatical work, marking categories of bases, relations between bases or phrases, etc.; (iii) Bases should divide into verbs, nouns and a few other open classes, according to the grammatical frames they fill. Functors should divide into a number of small, closed classes, according to whether they mark categories of the verb or noun, relate verbs to nominal participants, and so on; (iv) A typical clause should have one verb; (v) Verbs should occur in much the same range of semantic relations with nominal participants in clauses, though the grammatical marking of these relations will vary somewhat across languages.

Insofar as all languages conform to this pattern, it follows that a description of the basic syntactic structure of clauses, using familiar labels like V, NP, TENSE, SUBJ, OBJ, etc., will by itself give a fair indication of the semantic scope and structure of clauses. Let us add another assumption: (vi) Sentence structure can be described in terms of clause constituents and operations on clauses.

This section discusses three aspects of form-function pairings in Kalam which depart from model clause structure: (i) serial verb constructions and (ii) constraints on what may be said in a single clause. Neither of these phenomena hold much novelty for linguists in the 1990s. However, the problem remains of how to write a grammar which shows clearly how things are said. My grammar did not show this clearly, because it was syntax-based and organised in terms of assumptions (i – vi).

5.2.1 Serial verb constructions

In recent years serial verb constructions (SVCs) have come to the fore in theoretical and comparative studies but this was not the case in the 1960s. I was uncertain how Kalam SVCs should be handled in a generative grammar. There seemed to be three main choices, none of them entirely satisfactory.

5.2.2 Single clause analysis

One might propose (as was done in my thesis) that all Kalam serial verb constructions are basically single clauses with a complex predicate. SVCs certainly have some characteristics of model clauses. Each contains only one inflected verb, the verbs typically share a single subject and are understood to share the same tense, and the sequence is often spoken

under a single intonation contour. Furthermore, certain verb sequences come under the scope of a single negative or modifier.

(40) *nad ma-tb tk-p-yn*
you not-cut sever-PERF-1SG
'You didn't cut it off.'

(41) *kasek d ow-an!*
quickly get come-IMP 2SG
'Bring it quickly!'

5.2.3 Single lexeme analysis

A parsimonious lexical analysis can be made for certain serial verb strings, namely, those that are true idioms or frozen expressions. Such cases are a small minority and I will not discuss them further here.

I did not take the further step of arguing that most SVCs or SVSs constitute a single lexeme. Most can be derived by generative rules and so do not qualify as lexemes in a parsimonious grammar. It is true that many strings of verb stems also happen to be familiar collocations, denoting actions characteristically associated in everyday experience. But the point was made earlier that while the scope of the terms 'lexical item' or 'lexeme' is sometimes extended to include any familiar form-meaning pairing denoted by a closely bound sequence of morphemes (whether a single word or a phrase) such an extension is not in accord with either the requirements of parsimony or autonomy. Once we allow such extensions, we are talking about a different kind of language system, in which no sharp boundary can be drawn between lexemes and any form-meaning pairing which is a common usage.

5.2.4 Multi-clause analysis

Let us return to the idea that all serial verb constructions are a single clause with a complex predicate. My analysis failed to note that in extending "clause" and "predicate" to include SVCs and SVSs, I was talking about construction types which have rather different properties from model clauses and predicates. For example, different verb stems in a SVC can (within certain fairly strict limits) take different modifiers and complements. In the final "clause" of the following sentence, for example, the SVC contains three verb stems: *ap-* 'come'; *jlwk-* 'scour'; and *am-* 'go'. Each verb shares the understood subject: *ñg* 'water, stream'. How-

ever, *am-* 'go' takes a unique modifier *dad* 'carrying', yielding the sense 'carry away' while *jlwk-* 'scour' takes a direct object *lwm* 'earth', which it shares with *dad am-* but not with *ap-*.

(42) *yad wog g-ng, mol g g*
I garden make-SS FUT ditch make make
ay-y ñg sak-ab-yn,
form-SS PRIOR water dam-REC PAST-1SG
ap lwm jlwk dad am-b
come earth scour carrying go-PERF-3SG
'When I'm about to make a garden, I make a ditch, I dam the stream and then it (the water) comes and scours out the soil.'

Such complexities are more in keeping with a multi-clause construction. One might treat SVCs such as (42) – indeed, all well-formed SVCs – as a string of conjoined clauses, with transformations having applied to delete coreferential constituents.

There is considerable merit in the conjoining analysis. Typical SVCs show a strong likeness to those compound sentences consisting of one or more dependent clauses, preceding a final clause, in which the dependent verbs are marked for "prior action by same subject as final verb" (see 1.2.4). Indeed, the notion of prior action by same subject is built into typical SVCs, because the order of the verbs usually matches the temporal sorder of the acts they refer to. The semantic effect of adding the prior action marker is often slight: compare the two realisations of the formula for hunting game mammals in (34) and (35). In (34) the third verb, *ap-* 'come', is marked for prior action by same subject whereas in (35) it is a bare verb stem. Use of the prior action marker emphasizes the separateness of the action marked from the one that follows. Compare the following:

(43) *am tw d ow-an!*
go axe get come-IMP 2SG
'Go and fetch the axe.'

(44) *am tw d-y ow-an!*
go axe get-SS PRIOR come-IMP 2SG
'Go and get the axe and then come!'

However, the multi-clause analysis did not sit very comfortably either. We have already noted certain respects in which typical SVCs resemble

model clauses, and referred in section 4 to the tendency of SVCs to become speech formulas. Givón's recent experimental study of Kalam and other New Guinea languages (Givón, 1990) reinforces the prevalent view that SVCs are functionally more like the single clauses than the conjoined clauses of non-serialising languages.

5.2.5. What's wrong with a multi-clause analysis

I believe my earlier concerns about finding a single best way of analysing Kalam serial verb constructions rested on three questionable assumptions.

The first was that (at one level or another) we must analyse a given SVC as either one clause or as two or more clauses. The clause is a very useful analytic construct, but we should take care not to reify it or to force all clause-like constructions into its mold. There is a cluster of properties that can be associated with typical clauses. In any one language, some constructions will have more of these diagnostic or typical properties, some only a few, and others none. Kalam SVCs resemble model clauses in certain ways, but on some syntactic tests they are something more than a single typical clause an something less than a sequence of clauses. To say that they are "really" one clause, or "really" two or more clauses is something of a distortion.

The second questionable assumption was that, whatever, analysis is preferred, it should be able to accommodate most if not all SVCs. Olson (1981), Foley and Van Valin (1984), and Crowley (1987) have pointed out the heterogeneous nature of SVCs in various languages of Oceania and elsewhere. I will not reiterate their points here, except to note that they make a useful distinction between three types of SVC – those in which they SVC acts as a single predicate, those in which it acts as a combination of two predicates, and those in which it is a combination of two predicate-plus-direct argument units.

The third assumption is that in describing any given SVC we must settle for a unique analysis – either syntactic or lexical. While such a choice is required by the terms of reference of a parsimonious grammar, we do not have to limit our description to these terms. There is evidence that language users know certain syntactically complex strings, including certain SVCs, in more than one way, as we argued for speech formulas. A given SVC form-meaning pairing may be amenable to autonomous syntactic analysis, but it may also function as a formula which is the name or standard way of saying something and be subject to special idiomaticity and universe of discourse constraints.

5.3 *Notes on the semantic content of clauses and on interclause relations*

5.3.1 Constraints on clause content

Serial verb constructions are problematic but Kalam has other single-verb constructions which in most respects are model clauses, e. g., (4)–(6) and (37)–(39). However, the range of events and situations expressed by such single-verb clauses is, in general, much narrower than in European languages.

For example, whereas in English we can say "The man threw a stick over the fence into the garden", in Kalam it is necessary to spread this information over at least three clauses using four verbs.

(45) *b mon-day d yok-e-k, waty at*
man stick-piece hold displace-DS PRIOR-3SG fence top
am-b, wog-mgan yow-p
go-PERF 3SG garden-in fall-PERF 3SG
Literally: 'The man took the stick and threw it, it went over the fence, it fell in the garden.'

No doubt the restrictions are largely due to the small number of verbs in Kalam and to the constraints on the kinds of arguments verbs can take. For example, whereas in English one can say "X broke Y", in Kalam there is no transitive verb "break", only the intransitive *pag-*. One must say "X did such-and-such (or X happened), then Y broke", as in:

(46) *kab añañ ap yap pk-e-k*
rock glass come fall strike-DS PRIOR-3SG
pag-p ok
break-PERF-3SG that
'The stone fell on the glass and it broke.'

To translate "I'm building the house for you" one needs to say, essentially "Having built the house, I'm going to give (it) to you":

(47) *kotp g-y np ñ-ng*
house make-SS PRIOR you give-SS FUTURE
g-p-yn
do-PRES-1SG

But that is not the whole story. The discourse structure rules discussed in Section 4 also play a part. A well-formed event report should state certain preliminaries and outcomes (see (29)), and each of these requires at least a separate verb. Thus, one would not simply say "A stone struck the glass and it broke"; one should first say something about the stone's movement – was it thrown?, did it fall? Where an English speaker might begin a report with the sentence "Mosak has just shot a wild pig in his garden", Kalam convention would require that the narrator spell out that the pig had come into the garden.

(48) *Mosak [kaj wog day ap md-e-k]*
Mosak pig garden enclosure come stay-DS PRIOR-3SG
ñag-a-k
shoot-PAST-3SG
i. e. 'Mosak shot the pig which had come and stayed in the garden.'

A single clause translation such as:

(49) *Mosak kaj nwp wog day ñag-a-k*
Mosak pig it garden enclosure shoot-PAST-3SG

is not ungrammatical. It is "merely" bad Kalam in that context. I did not know how to specify the stylistic constraints on number of NP per clause, constraints which were not categorical but a matter of preference (variable rules had not yet arrived) and so I simply shirked the issue.

6. Conclusion

6.1 Have we progressed?

After 20-odd years it has become easier to see where and why my 1966 description fell short. A syntax-based grammar with a parsimonious lexicon rump can describe part of the expressive power of Kalam (or any other language) but misses many of the conventions which are part of idiomatic competence in Kalam.

Can we now do a better job? Linguistics has come a long way in the last 20 years. Every time I look through the journals and new books in

linguistics I am both daunted (there are so many of them) and impressed by the range and quality of the best work being done nowadays. In the early 60s we were trained, in synchronic analysis, to deal rigorously with a relatively limited range of problems which then seemed amenable to systematic treatment. Students entering the field in the 1990s are likely to receive a broader training, being exposed to new theoretical issues and methods in the study of stylistic and individual variation, discourse and conversational analysis, semantics, language universals, etc., as well in phonology and syntax. There is now a strong concern with the interaction of function and structure in all domains.

However, although recent scholarship has made progress in tackling some of the problems discussed in Section 5, having to do with the notion "clause" and the semantic and grammatical relations between and within clauses, and has made advances in the fields of discourse analysis and pragmatics, it is not clear that we have squarely faced all the issues raised in Sections 3–5.

My thinking about these last matters changed considerably in the mid-1970s. The changes were largely due to two influences. One was the experience of doing careful transcripts and analysis of large quantities of English spoken discourse, which provided some insights about what it takes to be fluent in a language (Pawley and Syder 1983) and which led me into the study of oral formulaic discourse genres. The other was the work of George Grace at the University of Hawaii, critically reviewing modern linguistics. I was exposed to Grace's ideas in a course he taught in 1975 and in the long series of "ethnolinguistic notes" he issued, which formed the basis of Grace (1981, 1987). He pointed to the scandalous neglect, in linguistics, of the knowledge underlying idiomatic command of a language.

Grace warned that a language should not be assumed to have just the characteristics of its linguistic description. He argued (1981: 14) that "grammar and lexicon are terms referring to parts of linguistic descriptions, not to parts of languages", and that our view of the basic structure of language is partly a function of the traditional aesthetics of scientific discourse: "The scientific aesthetic is surely one of the fields which support the grammar-lexicon model of linguistic description since what that model does is precisely to separate the aesthetically attractive aspects (i. e. grammar) of what is to be reported from the unattractive aspects (the lexicon ...)" (Grace 1981: 16).

Grace (1981 and especially 1987) discusses what is entailed in saying things (in the sense of talking about particular subject matters) in any

language. He argues that while the resources any language has for saying things are partly independent of particular worlds (real or fictive) these resources are bound to particular conceptual worlds to a much greater extend than linguists have generally cared to admit. The things people talk about, the conceptual events and situations and their ingredients, are to a considerable extent particular to a language community or a subgroup in that community (consider the theoretical contructs of each field of science or religion). It follows that things said in one language or genre of discourse are sometimes not translatable. The differences are not necessarily limited to lexical fields. They extend to discourse conventions and formulas for constructing ideas.

6.2 On the description of idiomatic competence

Part of saying things is to hook utterances to discourse contexts and to do things with them. We are dealing, in effect, with communicative competence. In this paper I have said almost nothing about conventions of pragmatic inference and conversational appropriateness, which are clearly part of communicative competence. I am chiefly concerned here with idiomatic competence. What would it take to write a generative analysis of how to say things idiomatically in Kalam, or in any other language?

The material discussed in Section 3 draws attention to one aspect of idiomatic competence which largely falls outside the scope of parsimonious grammar-lexicon treatments: knowing the names or standard ways of referring to things. It turns out that knowing the names for things in Kalam is a very different matter from knowing the parsimonious lexemes. The latter kind of knowledge has to do with certain form-meaning pairings which are grammatically defined. The former has to do with a much larger set of form-meaning pairings which are defined by common usage and social contract, as well as by structural criteria. Elsewhere (Pawley 1986) I have used the term "laymen's lexemes" to distinguish such conventional expressions from "grammarian's lexemes".

It is important to note that two quite distinct conceptions of 'dictionary' have evolved within modern traditions of language description. Conventional monolingual dictionaries, such as the O. E. D. and Websters, include a great deal of material that would be excluded on principle from a parsimonious grammarian's lexicon. The great dictionaries of English and other languages are not completely consistent in practice, but work

on the general principle that any word or phrase should be included if it is a standard way of referring to a familiar idea – roughly all common usages at the level of word or compound word, plus many catch phrases and other institutionalised sayings. One consequence of this approach is that the boundaries of the lexicon are not at all well-defined. For one thing, standardization or familiarity of a form-meaning pairing is a matter of degree. At least 27 different operational tests, using social and linguistic criteria, can be used to measure the degree to which a particular form-meaning pairing is institutionalised in English (Pawley 1986). It is probable that in English, as in Kalam, most of the expressions that are institutionalized to some degree are grammatically well-formed.

Since the 1960s the lexicon's status in theoretical linguistics has gone up. Instead of being an appendix it has moved closer to the heart of grammar. At the same time, some writers on grammar have tacitly adopted a broader definition of "lexeme", moving closer to the conventional lexicographer's. For example, recent work on complex nominals (e. g., Downing 1977; Levi 1978) has taken the position that many of the compounds that Lees (1966) wished to generate by syntactic rules are actually lexicalised. The territory of the lexicon has been extended.

We should be clear about the implications of this shift of position. In the first place, as already noted, it entails accepting a quite different definition of "lexical item" and "lexicon" than that followed by Bloomfield or in classical generative grammar. The extended lexicon, corresponding roughly to that aimed at by the great conventional dictionaries, has much more descriptive power than the parsimonious lexicon, but the boundary between lexicalised and free expressions is now even less well-defined than before. In the second place, it entails different evaluation measures for descriptions.

The extended lexicon, as a descriptive construct, serves at least the following additional functions:

(i) It should distinguish between those well-formed strings that are part of the repertoire of names for actions, objects, etc. recognized by the speech community and those that are not.

(ii) It should describe and partly explain native speakers' intuitions that certain expressions are institutionalised to a greater degree and others to a lesser degree, and in particular respects.

(iii) If general speech formulas are included, it should provide a partial explanation of the puzzle of how speakers distinguish between strings that are idiomatic and those that are merely grammatical.

We should avoid the trap of trying to describe the non-autonomous parts of idiomatic competence in terms of distinct components, i.e., productive rules vs lexicon. Insofar as there is no sharp boundary between productive speech formulas and lexically specified formulas (fixed expressions), we are not dealing with a two-part (three-part, etc.) system of discrete modules, but with a continuum of types.

Generative grammarians are often happy to distinguish between those derived words or compounds that are common usages, e. g., *unexceptional, inexpensive*, from those that are potential words but unidiomatic (*inexceptional, unexpensive*). However, there is no difference in principle between drawing this distinction between words and drawing it between phrases and longer sequences. *The day before yesterday* and *the day after tomorrow* (ideas that in many languages are each represented by a single morpheme) are standard terms but not *the day before the day before yesterday*, etc. For this we prefer *two days ago*. We say *Mary is five feet eight tall* but not *Mary is five and two thirds feet high.*

We might call an account of this continuum of familiar words and phrases, and the idiomatic constraints that apply to their formation, the formula grammar. It will be a somewhat messy mixture of generative principles and fixed ways of linking meaning, form and use, which overlaps with autonomous syntax and the parsimonious lexicon (see discussion in 4.3) (see discussion in 4.3).

6.3 On untidy descriptions

While there is much that still puzzles me, I can now make a better fist of describing Kalam than I could in the 1960s. It will not bother me unduly that the description will be somewhat untidy with a lot of overlap or duplication and without sharp boundaries in certain places. I take comfort in the thought that the human mind is probably built to handle things in that way – able to know parts of language both analytically and holistically and able to cope with fuzzy categories, without much concern for the aesthetic principles that are valued so highly in scientific description of unconscious matter. It may seem unfortunate for the grammarian that the boundaries and content of formulas are often somewhat ill-defined. But that is how they are. Speakers of a language have to live with them. So must the linguist who wishes to describe idiomatic competence.

Notes

1. Cited by Fromkin et al. (1984: 218).
2. Thanks are due to fellow participants in the Ocho Rios conference, particularly my appointed "interpreter", Michael Silverstein, for comments on the draft of this paper. An earlier version (titled "On meeting a language that defies description by ordinary means") was read at the 13th Congress of the Linguistic Society of Papua New Guinea, Lae, in August 1980. I am indebted to the Wenner-Gren Foundation for supporting my field trips to the Kaironk Valley in 1963–4 and 1965, to the Research Grants Committees of the Universities of Papua New Guinea and Auckland for funding briefer trips made in 1969 and 1972, and to Australian National University for enabling me to carry out research on Kalam during a three months Visiting Fellowship in 1975.
3. Some of Majnep and Bulmer's publications on Kalam ethnobiology (especially 1990) include extensive linguistic texts. Several linguists other than myself have worked on Kalam. Bruce Biggs, of the University of Auckland, spent several months in the upper Kaironk Valley in 1960 and 1963. Lyle and Helen Scholz, of the Summer Institute of Linguistics, have carried out linguistic research on the Etp mnm dialect of Kalam spoken around Simbai since 1962, and they assisted Talmy Givon in research he carried out in Simbai in 1985. Since this paper was written Jonathan Lane has done a detailed study of Kalam serial verb constructions (Lane 1991).
4. Although *w* and *y* are phonetically vowels in certain consonants, they pattern morphophonemically as consonants. For example, the negative prefix has the variants *ma-* before a consonant and *m-* before a vowel. Before *w* and *y* it is realized as *ma-*.
5. Diachronic change can be discerned in which new verbs are occasionally formed by phonological fusion of two verbs followed by loss of the underlying morphological boundary.
6. Kalam speakers can get along without any specific verb stems. Proof of this last claim exists in the special "Pandanus Language" which the Kalam use in the forest when on expeditions to harvest and eat pandanus nuts or when hunting or eating cassowaries. In the Pandanus Language, which has essentially the same syntax and morphology as ordinary Kalam, but a completely different set of lexical labels, there are possibly fewer than 20 verb stems. All Pandanus Language verb stems appear to be of the generic type, and every verb stem meaning in ordinary language is assigned to one or another of the Pandanus Language generic verbs. In ordinary Kalam, however, the generic-specific difference among verbs stems is a matter of degree, in that some verbs are intermediate in their behavior.
7. On another important question, however, there was some disagreement. What do we mean by "*the* structure" of a language? Is there is uniquely correct structural analysis? As Fred Householder once put it, some linguists aimed at "God's truth", holding that there is a single correct analysis, presumably that which captures the units and principles which are significant for native speakers themselves. Other linguists (the "hocus pocus" school) were doubtful that such a goal is attainable, and asserted that they were content to describe verifiable regularities in the data. The problems associated with both points of view were not fully aired in the heyday of structuralism.

   Looking back on this period, commentators have tended to stress the prevalence of the hocus pocus view. In doing so they miss an important point. In at least some domains of analysis, most structuralists sought "God's truth". Much of the force of structural linguistics came from the discovery and application of the "emic" principle: that some

differences are significant for native speakers. While Chomsky horrified post-Bloomfieldian structuralists by freely using the term "native speaker's intuitions" and asserting that such intuitions were the real stuff of linguistic inquiry, the fact is that native speakers' judgements and knowledge – about what sounds or means the same, about what is or is not grammatical, etc. – had always played an important role in the construction and evaluation of linguistic analyses. The explanatory power of phonemic analysis, compared with phonetic description, was precisely that the former dealt with native speakers' perceptions of sounds. When Bloomfield said "some differences make a difference" he was talking about differences that are significant to users of the code.

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