CHAPTER 7

Hyperpolysemy in Bunuba, a polysynthetic language of the Kimberley, Western Australia

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Like a number of other Kimberley languages, Bunuba has very few morphologically simple verbs. Most verbs (including exponents of some semantic primes, such as WANT, SEE, and THERE IS) consist of an inflected auxiliary combined with an invariable coverb. After a brief review of how other predicate primes are expressed in Bunuba, the main body of the chapter considers semantic primes SAY, DO, THINK, HAPPEN, and FEEL, which, it is argued, are all expressed by a single, morphologically simple Bunuba verb MA. Detailed language-internal evidence is adduced to support the existence of this striking five-way polysemy. It is shown that each of the five identifiable lexical units has a distinctive syntactic/semantic profile. These facts are incompatible with alternative analyses which posit a single general abstract meaning.

1. Introduction

Bunuba is an Australian Aboriginal language spoken in and around Fitzroy Crossing, a small town about 400km east of Broome in the Kimberley region of north-west Western Australia (Rumsey 2000; Knight 2004). It is severely endangered, with perhaps 100 speakers in all, mostly over the age of forty.

Bunuba is a non-Pama-Nyungan language, whose closest genetic relative appears to be Gooniyandi (Knight 2004; McGregor 1990). Like most languages of the Kimberley, it is predominately head-marking. The verbal auxiliary carries prefixes indexing the person and number of subject and object. Unlike many nearby languages (but like Gooniyandi in this respect), Bunuba has no noun class markers.

Almost all verbs in Bunuba are formally complex, consisting of an inflected auxiliary (drawn from a closed class of 10 roots)[1] together with an invariable coverb (drawn from a large open class). The coverb carries most of the lexical content of a complex verb, while the auxiliary expresses the grammatical properties and hosts the prefixes and suffixes. Simple verb constructions also occur, consisting of an auxiliary alone without a coverb, but they are highly restricted

in Bunuba, compared with many other nearby languages which also have coverb + auxiliary constructions, such as Jaminjung (Schultze-Berndt 2000), Marrithiyel (Green 1989), Ngan'gityemerri (Reid 1990) and Wunumbal (Carr 2000). In fact, in Bunuba only two auxiliary roots can occur in simple verb constructions. They are the extremely common item MA, and a much rarer item NA, which appears to function as a partial reflexive/reciprocal counterpart of MA. (By convention, auxiliaries are cited in uppercase letters. Their forms vary somewhat in example sentences due to allomorphy conditioned by the preceding and/or following morphemes.)

The present study is focused on the polysemy—or to coin a phrase, the hyper-polysemy—of the simple verb MA. I will argue on formal and semantic grounds that MA functions as an exponent of no less than five of the semantic primes—DO, SAY, THINK, HAPPEN, and FEEL—proposed by the Natural Semantic Metalanguage approach (Wierzbicka 1996; Goddard and Wierzbicka eds 2002).

How are the other verbal semantic primes expressed in Bunuba? Since with the exception of MA, all other Bunuba verbal constructions are complex, it follows that certain auxiliary + coverb combinations, namely those which express semantic primes, must be regarded as single units from a semantic point of view. This conclusion leads to a radically different approach to the Bunuba verbal system from that adopted in previous studies of comparable languages.

The most important studies (Schultze-Berndt 2000; McGregor 1990, 2002) of the coverb + auxiliary system in languages of this region describe it as a largely semantic system of verb classification:

> these verbs [i.e., auxiliaries] have a similar function, in the domain of verbs, to nominal classifiers in the domain of nominals. They form a closed class, are obligatory in certain constructions (as it happens, in every finite clause), and serve to group all verbal expressions into a limited number of classes. (Schultze-Berndt 2000: 212)

McGregor (2002: 29ff) reaches a similar conclusion, arguing that verb classificatory system works in terms of three abstract factors: vectoral configuration, Aksionsart, i.e., telicity, dynamicity, etc., and valency. Schultze-Berndt's analytical categories are also highly abstract.

NSM assumptions give rise to a more nuanced and fine-grained approach. First, as just stated, a small number of coverb + auxiliary combinations must be recognised as semantically unitary. Given the analysability of many other combinations, it follows that a uniform account of Bunuba verb classification is impossible. Second, when it comes to identifying semantic content, NSM analyses are much less "abstract" than other approaches, because of the constraint that they must be expressible by way of paraphrase in terms of ordinary simple meanings, expressible in Bunuba (as well as in other languages). An NSM approach to Bunuba verbal semantics identifies multiple subclasses sharing common components, related in a network or family resemblance fashion (Knight 2004).

Table 1. Partial listing of predicate semantic primes: Bunuba

Mental predicates:	MA/LINGA + RA2 *think/think about*, BINARRI (ADV) ~ BINARRIYA + MA2 *know*, DAWUNGGA + MA2 *want*, MA *feel*, MILA + RA2 *see*, WINYI + RA2 *hear*
Speech:	MA *say*
Actions, events, movement:	MA *do*, MA *happen*, NGULANGGA + RA *move*
Existence, possession:	BAGA + RA *there is*, GURRIJGA + RA2 *have*
Life and death:	YATHA + RA *live*, DULUGA + WU *die*

2. Semantic primes in Bunuba

With a few exceptions, the predicate semantic primes and their Bunuba counterparts are listed in Table 1. There are three notable points. First, ten of the fifteen predicate primes listed here are expressed by fixed auxiliary + coverb combinations. That is, in combinations like *duwungga* + MA2 WANT, *mila* + RA2 SEE, and *baga* + RA THERE IS, as in the following canonical contexts for semantic primes, the roots MA2, RA2 and RA do not convey any specifiable meanings. To put it another way, in these particular combinations it is impossible to "divide up" the meaning, apportioning part of it to the coverb and part to the auxiliary. This is because semantic primes are, by definition, unitary, indivisible meanings.

(1) *Dawungga lima wad bungay* job*jawu.*
dawungga li-ma wad wu-ngi-ra-y job-yawu
want 1SG.A>3SG.O-MA2 go FUT-1SG.S-RA-EXCL shop-ALL
'I want to go to the shop.'

(2) *Nginjagama ngurru milala.*
nginjaga-ma ngurru mila-l-ra
what-indefinite over there see-3SG.O<1SG.S-RA2
'I see something over there.'

(3) *Bagara galagalangarri gawiy.*
baga-ø-ra gala-galangarri gawiy
there.is-3SG-RA different-different fish
'There are different (kinds of) fish.'

However, although the auxiliaries RA, RA2, MA2 and WU are in a strict sense meaningless in the combinations listed in Table 1, it does not follow that they are meaningless in other coverb + auxiliary combinations. On the contrary, I argue elsewhere (Knight 2004) that these auxiliaries in many cases do have specifiable meanings in semantically complex combinations.

Table 2. Polysemous exponents of verbal primes in Bunuba

Exponent	Prime meaning	Other meanings	Other auxiliary + coverb combinations
binarri [ADV]	KNOW	–	*binarriya* + MA2 'show' *binarriya* + RA2 'teach'
dawungga + MA2	WANT	'like'	
mila + RA2	SEE	–	*mila* + RA 'look around'
ngulangga + RA	MOVE	–	*ngulangga* + MA *ngulangga* + MA2 *ngulangga* + NGARRI
baga + RA	THERE IS	'lie.down' 'stay' 'sleep'	
gurrijga + RA2	HAVE	'hold onto'	
yatha + RA	LIVE	'sit' 'stay'	

Third, MA stands out in Table 1 because it is identified as an exponent of no less than five semantic primes—DO, SAY, THINK, HAPPEN, and FEEL. The main task of this chapter is to show on language-internal evidence that simple verb MA is indeed five-ways ambiguous[2] (actually, MA also has a sixth, semantically complex meaning linked with SAY).

Many of the Bunuba exponents of semantic primes are polysemous in ways which are paralleled in many other languages (cf. Goddard and Wierzbicka eds 1994, 2002). Summary information is given in Table 2. The table also shows some of the meanings expressed by the coverbs when they are combined with various other auxiliaries (discussed at length in Knight 2004).

Some brief notes about these identifications and associated polysemies are in order. Unusually for Bunuba, the exponent of KNOW is not a coverb, but an adverb: *binarri*. This is obviously related to the coverb *binarriya*, however, and when this coverb combines with either MA2 or RA2, the meanings are 'show' and 'teach', respectively. Obviously both these meanings involve KNOW.

In identifying the semantic primes THERE IS and LIVE, informants gave me the posture expressions *baga* + RA and *yatha* + RA, respectively. In narratives these combinations commonly appear with the meanings 'lie' and 'sit', respectively, but their relative infrequency in their semantically primitive senses is not relevant to their status as exponents of semantic primes. The sole criterion is their claim to indefinability, with the concomitant claim that other, non-prime meanings are analysable in terms of the primes. That is, the claim is that the non-prime senses of *baga* (i.e., 'lie down', 'stay', 'sleep') are decomposable, whereas the THERE IS sense is indefinable. Likewise with *yatha* + RA, I assume that all senses except for the LIVE sense are complex and decomposable into simpler components.

A comparable polysemy for posture expressions is common in other Australian languages. For example, semantic prime THERE IS is expressed by two different posture verbs in the geographically contiguous languages Pitjantjatjara/

Yankunytjatjara (P/Y) and Arrernte: by *ngaranyi* 'stand' in P/Y and by *aneme* 'sit' in Arrernte (Goddard and Harkins 2002).

Likewise, polysemy between WANT and 'like' is common in Australian languages, and in languages of the world (cf. Goddard 1991; Goddard and Wierzbicka eds 1994). The assumption is that 'like' is a complex meaning which requires WANT and other semantic primes in its explication, whereas the WANT sense is indefinable. The same applies to HAVE and 'hold onto'. A polysemy comparable to that of Bunuba *gurrijga* + RA2 is found in languages such as Yankunytjatjara and Arrernte in central Australia (Goddard 1996; Henderson and Dobson 1994).

The exponent of SEE is the textually frequent combination *mila* + RA2, with the transitive auxiliary RA2. It is notable that by switching to the intransitive auxiliary RA, the meaning becomes 'look around'. It might be tempting on this basis to assume that coverb *mila* expresses "pure" SEE, which is manifested as either transitive or intransitive depending on the auxiliary; but this argument does not go through: firstly, because the assumptions of the NSM approach require that every prime be expounded by a full lexical item (thus, a coverb alone will not suffice), and secondly, because *mila* + RA2 "works" unproblematically in explications as the equivalent of SEE. In fact, it is needed for the explication of *mila* + RA 'look around'.

3. Hyperpolysemy of simple verb MA

It is argued here that MA conveys the following semantically primitive senses: SAY, DO, THINK, HAPPEN, and FEEL. That five semantic primes can be expressed (at least partially) using a single lexical form is surely an extraordinary situation and one demanding close scrutiny. Furthermore, related to the SAY sense there is an additional specialised polysemic meaning, glossed as 'call up'.

Certain sentences, such as in (4) below, are five-ways ambiguous. Usually, however, aspects of the constructional or textual context provide cues for disambiguation. For example, in (5) MA can only mean SAY, in (6) it can only mean THINK, and in (7) it can only mean FEEL.

(4) *Ngaanyima miy?*
ngaanyi-ma ø-ma-iy
I/I.PRO=I/I 3SG.S-MA-PAST
'What did he (or she) say/do/think/feel?' OR 'What happened?'

(5) *"Miyhayawu wad bungay", miyngarribiyirrantha.*
miyha-yawu wad bu-ngi-ra-y ø-ma-iy-ngarri-biyirrantha
meat-ALL go FUT-1SG.S-RA-EXCL 3SG.S-MA:SAY-PAST-HAB-3DL.OBL
'He went away, "I'm going for meat", he said to them.'

(6) *Jalungurruyarra limiy mithura niy.*
jalungurru=yarra li-ma-iy mithuri ø-ni-y
good=DUB 1SG.S-MA:THINK-PAST bad/off 3SG.S-NI-PAST
'I thought that it might be good but it's actually gone off.'

(7) *Yiningga lima.*
yiningga li-ma
just.like.that 1SG.S-MA:FEEL
'I feel just the same.'

SAY/DO/THINK polysemy is common in many non-Pama-Nyungan languages. Table 3 lists some languages in which this polysemy occurs, the canonical form of the morpheme, and whether it is conveyed through a simple verb construction or a complex verb construction. The languages listed are all in a geographical bloc, from the Kimberley region in Western Australia to the Daly region in the Northern Territory. On the face of it, therefore, SAY/DO/THINK polysemy is an areal feature.

Bunuba MA exhibits genuine language-internal polysemy. That is, it is not the case that the meaning of MA is vague or general, with the apparent differences being induced by the linguistic context. My argument is similar to that advanced by Goddard (1994) in relation to Pitjantjatjara *kulini* 'think', 'hear'. The reasoning has been expanded by Evans and Wilkins (2000), as follows:

> For the Australian language Pitjantjatjara, Bain (1979: 126) similarly claims a lack of distinction between perception and cognition senses of a basic verb: "there is no way to differentiate the concepts of thinking, listening and heeding in Pitjantjatjara. The same verb *kulini* does duty for all". In this case, however, there is clear evidence that we are dealing with distinct senses. In response to Bain's claim about Pitjantjatjara, Goddard (1994: 237) pointed out that the three senses of *kulini* have different syntactic frames: 'Only the THINK sense can take a "quasi-quotational" clausal complement...', 'only the 'hear, listen' sense can take a nonfinite circumstantial complement', and 'only the 'heed' sense can take a locative case complement'. (Evans and Wilkins 2000: 563)

Table 3. SAY/DO/THINK polysemy in some Australian languages

Language and source	Verb form	Meanings	Verb type
Gooniyandi (McGregor 1990: 558)	*miga*	say; do; tell; think	complex
Ungarinyin (Rumsey 1982: 157-66)	*-ma-*	say; do	simple
Nyikina (Stokes 1996: 179)	*-I-*	say; do	simple
Gunin/Kwini (McGregor 1993: 44)	*-MA*	say; do	simple
Wunambal (Carr 2000: 139)	*=MA*	say; think	simple
Kija (Kofod 1996: 89)	*-INI*	say; do	simple
Jaminjung (Schultze-Berndt 2000: 349)	*-yu(nggu)*	say; do	simple
Ngan'gityemerri (Reid 1990, 2000: 335)	*ngiN*	say; do; think	simple
Emmi (Ford 1998: 226)	*me*	say; do; feel	simple/complex[3]

In other words, I will argue that the five semantically primitive meanings can be separated from one another using various formal and semantic tests. These tests or criteria, which are discussed in detail in subsequent sections are: (a) restrictions on person/number and animacy of the subject NP; (b) differential availability of semantic roles for an NP added by means of Oblique pronominal suffix, e.g., only SAY can take an Oblique addressee argument, only DO can take an Oblique instrument argument; (c) the existence of lexical alternatives, either allolexes, e.g., *linga* + RA 'think.about', or lexically specific disambiguated expressions, e.g., MA *guda* [stomach] = FEEL. By taking this full suite of criteria into account, a distinctive profile can be compiled for each semantically primitive sense.

4. MA as HAPPEN

Like all Bunuba verbs, MA takes pronominal prefixes which cross-reference its core arguments. The HAPPEN sense of MA is distinguished by a very striking, albeit semantically natural, distributional restriction—namely, that its subject can only be cross-referenced as 3SG.S or 3NSG.S, and it must be inanimate. Though a sentence like (4) above is five-ways ambiguous, one like (9), with 1SG subject, is only four-ways ambiguous because the HAPPEN sense is excluded once the subject is no longer 3SG. That is, the inability to switch to a non 3rd person subject is diagnostic of a distinct sense of MA, namely, HAPPEN.

(8) *Thurrandaywa miy.*
thurranda-yuwa ø-ma-iy
two-LOC 3SG.S-MA-PAST
'He or she said/did/thought/felt (it) twice.'
'It happened twice.'

(9) *Thurrandaywa limiy.*
thurranda-yuwa li-ma-iy
two-LOC 1SG-MA-PAST
'I said/did/thought/felt (it) twice.'
'*I happened (it) twice.'

To add an "undergoer" to HAPPEN, the Oblique suffix is used.

(10) *Ngindaji miyngarragi.*
ngindaji ø-ma-iy-ngarragi
this 3SG.S-MA-PAST-1SG.OBL
'This happened to me.'

A second characteristic property of HAPPEN is severe restrictions on the kinds of NP which can appear as overt subject. As one would expect, they must

be indefinite/interrogative inanimates, i.e., expressions with meanings like 'something', 'what', 'some things', 'many things', etc. It is just impossible to get an ordinary NP, especially an animate NP, as subject of HAPPEN, e.g., to say anything like 'the man happened'. So while it is quite alright to use the inanimate indefinite *nginjaga* 'something' as the subject of MA:HAPPEN, the animate indefinite *ngunda* 'someone' cannot co-occur with MA:HAPPEN.

A third characteristic of MA:HAPPEN is that it can co-occur with the adverb *yiningga* 'like this' to form expressions like 'it happened like this'.

(11) *Yiningga miy jirali.*
yiningga ø-ma-iy jirali
like.this 3SG-MA-PAST long.ago
'It happened like this a long time ago.'

5. MA as SAY vs. MA as DO

SAY is in many ways the most obvious sense of MA, because the most frequent use of MA in the simple verb construction is to frame quoted or reported speech in narratives. Clearly in this context only the SAY sense is coherent, so no ambiguity arises.

(12) *"Yatha wunggurrantha", burrmiybiyirrantha.*
yatha wu-nggurr-ra-ntha wurr-ma-iy-biyirrantha
stay FUT-2NSG.S.NONPAST-RA 3NSG.S-MA-PAST-3DL.OBL
'"You two can stay", they said (*did, *thought, *felt, *happened) to them.'

(13) *"Yaningi jalungurru muway" miy.*
yaningi jalungurru muway ø-ma-iy
today good place 3SG.S-MA:SAY-PAST
'S/he said, "Good morning".'

(14) *Yaninja "wau!" wurrmiynhingi.*
yaninja wau wurr-ma-iy-nhingi
alright whoa 3NSG.S-MA-PAST-3SG.OBL
'Alright, "Whoa!" they said (*did, *thought, *felt, *happened) to him.'

Similarly, where MA occurs with the lexical item *thangani* 'words' as its object, or with a single word or phrase as its object, as in the following examples, SAY is the only possible interpretation. These are not quasi-quotational constructions, but the principle is the same.

(15) *Gilima* *yuwana* *thangani ...*
(g)iy-li-ma yuwana thangani
IRR-1SG.S-MA one word
'If I say (*do, *think, *feel, *happen) one word ...'

(16) *'Wali'* *gurrma* *nyirra* *'yaninja'* *giyirrma.*
wali gi-wurr-ma nyirra yaninja gi-iyirr-ma
alright PRES-3NSG.S-MA DEM alright PRES-1R.S.NONPAST-MA
'They say (*do, *think, *feel, *happen) 'wali' and we say this (word) 'yaninja'.'

It could be argued that the interpretation is forced by the quotational context itself, i.e., by the fact that one can only SAY words to someone else—not think them, or do them, etc. In particular, it could be argued that there is no differentiation in Bunuba between SAY and DO (Rumsey 1990). This could seem natural on a view of speaking as a kind of social action in which one, as it were, "does words". It is therefore extremely significant that the SAY sense of MA is associated with several distinctive formal properties which distinguish it from DO (and from the other senses), including the following: (a) when an additional argument is introduced by way of the Oblique pronominal suffix, the semantic roles available to this argument differ between MA:SAY and MA:DO; (b) the oblique arguments are also subject to differing animacy constraints.

To appreciate the argument it is necessary to recognise that we expect, on independent grounds, that semantic primes SAY and DO will have inherently different valency options (Goddard and Wierzbicka eds 2002). In addition to its basic frame 'someone says something', SAY is expected to allow optional valencies of "addressee" and "topic". Similarly, in addition to its basic frame 'someone does something', DO is expected to allow additional valencies of "patient", "instrument" and "comitative". These possibilities can be represented schematically as below. Unless otherwise indicated, an NP variable like X, Y or Z can be either a person (SOMEONE) or a thing (SOMETHING); but notice that an addressee NP or a comitative NP has to be a person (SOMEONE), and that an instrument NP has to be a thing (SOMETHING).

Valency options for SAY:
someone says something
someone says something to person-X [addressee]
someone says something about X [topic]

Valency options for DO:
someone does something
someone does something to X [patient]
someone does something (to X) with thing-Y [instrument]
someone does something (to X) with person-Z [comitative]

Table 4. Differential availability of semantic roles of an Oblique NP for four different senses of MA

	DO	SAY	THINK	FEEL
patient (to X)	yes	no	no	no
instrument (with X)	yes	no	no	no
addressee (to X)	no	yes	no	no
topic (about X)	no	yes	no	yes
comitative (with X)	yes	?yes	no	?yes
purpose (for X)	yes	no	no	?yes

As mentioned, a Bunuba verb can take an Oblique pronominal suffix to introduce an additional non-core NP argument. The suffix cross-references the person/number of this additional argument, but the semantic role of the NP can vary widely. It can be an addressee, an instrument, a comitative, a beneficiary, etc. The role of the oblique pronominal suffix is purely syntactic, i.e., to add a further argument without specifying its semantic role.

Now the key fact: when an Oblique pronominal suffix is attached to MA in a simple verb construction, only some of these potential semantic roles are available—depending on the sense identity of the verb. With each sense, certain semantic roles are permitted and others are excluded. The main possibilities are set out in Table 4 above.[4] Therefore, when an oblique pronominal suffix is attached to the MA simple verb construction, we have a test which can distinguish the senses from one another. We will concentrate for the moment on the contrast between MA:SAY and MA:DO. With the SAY sense, an Oblique suffix can cross-reference an NP in the addressee role or in the topic role (i.e., 'say to –' or 'say something about –'). With the DO sense, it can cross-reference a patient or an instrument NP (i.e., 'do something to –' or 'do something with –'). The converse assignments are impossible.

(17) *Miynhingi.*
ø-ma-iy-nhingi
3SG.S-MA-PAST-3SG.OBL

MA:SAY
she said something to X [addressee]
she said about X [topic]
*she said something to X [patient]
*she said with X [instrument]

MA:DO
she did something to X [patient]
she did something with X [instrument]
*she did something about X [topic]
*she did something to X [addressee]

If MA expressed a single undifferentiated meaning, it would be difficult to account for this added specificity, given that it does not originate with the Oblique morphology itself. Instead, the semantic interpretations of the role of the added syntactic argument have to come from the semantics of MA itself.

The configuration of possible semantic roles associated with the Oblique suffix furnishes a set of criteria for distinguishing the senses from one another. The MA:SAY sense, for example, is the only one which can have the pronominal suffix cross-reference an addressee ('say to X'). It may be objected that, obviously, the addressee option only makes sense with a SAY interpretation, but this is just the point: the existence of the addressee option actually implies the existence of SAY as a lexical meaning in Bunuba. Likewise, the existence of the instrument option actually implies the existence of DO as a lexical meaning in Bunuba.

Furthermore, each of these semantic roles is subject to a further distinctive, semantically-motivated constraint; namely, that an addressee must be an animate (SOMEONE), while an instrument must be an inanimate (SOMETHING). In contrast, the other valency options, such as patient and topic, can be either animate or inanimate. Hence, when an interrogative/indefinite pronoun appears in the addressee role, it can only be *ngunda* 'someone/who', whereas in the instrument role, it can only be *nginjaga* 'something/what'. The topic and patient roles, on the other hand, can accept either interrogative/indefinite pronoun. Again, this pattern of restrictions would be difficult to explain if MA had a single meaning, undifferentiated between SAY and DO.

The attentive reader may have noticed an apparent anomaly in Table 4—the absence of a "topic" option with MA:THINK. Surely semantic prime THINK necessarily allows the option of saying things such as 'I was thinking about my mother'. We will come to the solution of this apparent anomaly shortly, when we consider the evidence for THINK as a further discrete sense of MA. Before that, however, it is convenient to note an additional polysemic extension based on the SAY sense.

6. MA as 'call up': Naming places

MA has a specialised sense glossed here, using local Aboriginal English, as 'call up'. This refers to the naming ('calling up') of places and tracts of country. The relevant sense occurs in an extremely limited syntactic frame; most commonly, in narratives when a Dreamtime figure is moving through the land and naming places. The following extract is typical. There is little possibility of ambiguity between this and the other senses. Furthermore, MA 'call up' has a syntactic peculiarity which sets it aside from all other senses: it can only take the 3SG form *-nhingi* of the Oblique suffix, unlike other senses which permit all person/number combinations of the Oblique suffix.

(18) *Yaninja nyirrajinhi<u>ng</u>i dalijba ray*
yaninja nyirraji-nhi<u>ng</u>i daliya-wa ø-ra-y
well DEM-ABL name-ITER 3SG.O<3SG.A-RA2-PAST
'Well, from then he named that place:

muway <u>ng</u>i<u>nd</u>aji: Ganbalamanganya
muway <u>ng</u>i<u>nd</u>aji ganbalaman<u>g</u>anya
place this [place.name]
miynhi<u>ng</u>i;
ø-ma-iy-nhi<u>ng</u>i
3SG.S-MA:SAY:call.up-PAST-3SG.OBL
he called up this place *Ganbalaman<u>g</u>anya*;

Wurrgunyu miynhi<u>ng</u>i;
wurrgunyu ø-ma-iy-nhi<u>ng</u>i
[place.name] 3SG.S-MA:SAY:call.up-PAST-3SG.OBL
he called up *Wurrgunyu*;

Gi<u>l</u>inymanja miynhi<u>ng</u>i;
gi<u>l</u>inymanja ø-ma-iy-nhi<u>ng</u>i
[place.name] 3SG.S-MA:SAY:call.up-PAST-3SG.OBL
he called up *Gi<u>l</u>inymanja*.'

7. MA as THINK

As mentioned, the reader may have wondered why THINK is not listed in Table 4 as allowing a cognitive topic option (i.e., 'thinking <u>about</u>'). Indeed, it is not possible to employ an Oblique pronominal suffix to add an NP in fulfillment of this semantic role: no oblique suffix is possible at all with MA:THINK. From the point of view of sense differentiation, this is obviously a clear diagnostic of a difference between the SAY and THINK senses of MA, but it raises the question of how the expected topic option for THINK can be expressed. The answer comes in the form of a distinct lexical item *li<u>ng</u>a* + RA2 'think about'. That is, to say in Bunuba that one 'thinks' certain things, one uses MA, but to specify that one is thinking about something or someone in particular the formally transitive verb *li<u>ng</u>a* + RA2 is used, with the topic NP cross-referenced as the second argument in the pronominal prefix. Compare (19a) and (19b). Example (20) is another example of *li<u>ng</u>a* + RA2.

(19) a. *Limiy wa<u>d</u> bu<u>ng</u>ayarra.*
l-i-ma-iy wa<u>d</u> wu-<u>ng</u>i-ra-y-yarra
1SG.S-ins-MA-PAST go FUT-1SG.S-RA-PAST-EXCL
'I thought: I might go.'

b. *Linga* *layi* *wad* *bungayarra.*
linga li-ra-yi wad wu-ngi-ra-y=yarra
think.about 1SG.A>3SG.O-RA2-PAST go FUT-1SG.S-RA-EXCL=DUB
'I thought about going.'

(20) *Ngindaji* *jiraliyarra* *linga* *la.*
ngindaji jirali=yarra linga li-ra
DEM before=DUB think.about 1SG.A>3SG.O-RA2
'I thought about this for a long time.'

From the point of view of the NSM model, it is clear that MA:THINK and *linga* + RA2 'think about' are in a relationship of allolexy; that is, they are alternative exponents of a single semantic prime. Allolexy refers to the situation where the same prime is expressed by variant forms, either allomorphs or allolexes, which may be conditioned by syntactic context (Wierzbicka 1996: 26). The main arguments in support of this conclusion are: (i) that aside from the syntactic difference, no specifiable semantic difference can be identified between them (paralleling 'think' and 'think about' in English, in this respect); and (ii) that any sentence with *linga* + RA2 always implies a related sentence with MA:THINK, i.e., if one 'thinks about Y' then one necessarily 'thinks'.

The following examples further show the difference between these two forms. Once a second argument is added through the oblique pronominal suffix, the THINK sense of MA can no longer be conveyed. In example (21), MA can only be interpreted as SAY, not as THINK. To convey the sense 'think about', the formally transitive allolex *linga* + RA2 is needed, as in example (22).

(21) *Ngalja* *limiynhingi.*
ngalja li-ma-iy-nhingi
frog 1SG.S-MA-PAST-3SG.OBL
'"Frogs", I said to him.'
'*I thought about frogs.'

(22) *Ngalja* *linga* *layi.*
ngalja linga li-ra-yi
frog think.about 1SG.A>3SG.O-RA2-PAST
'I thought about frogs.'

The neighbouring, and closely related, language Gooniyandi has a similar situation. The Gooniyandi coverb *miga-* has polysemous lexical content: 'say, tell', 'do', and 'think'. To say 'think about' in Gooniyandi, the coverb *lingi-* is used, cognate with Bunuba *linga*. The transitivity alternation is the same in both languages: in Gooniyandi one 'thinks' with *miga-*, but 'thinks about' with *lingi-*.

8. MA as FEEL

Although I do not have as much data on uses of MA to express semantic prime FEEL, I am fairly confident that the FEEL sense exists independently of the others. In a naturally occurring example like the following, FEEL seems to be the only appropriate interpretation. The speaker was explaining that she was feeling bad on account of homesickness and illness.

(23) *Ngayi jalungurru gulumiya.*
ngayi jalungurru ø-guw-l-u-ma-iy(a)
not good CV-IRR-1SG-INS-MA-PRES
'I don't feel good.'

In elicitation, other grammatical frames with MA:FEEL were obtained as follows. These are consistent with NSM hypotheses about the grammatical potentials of semantic prime FEEL.

(24) *Yiningga lima.*
yiningga ø-l-i-ma
like.this CV-1SG-INS-MA
'I feel like this.'

(25) *Ngaanyima gilima.*
ngaanyi=ma ø-gi-l-i-ma
I/I.PRO=I/I CV-PRES-1SG-INS-MA
'I feel something.'

At the moment, however, perhaps the best evidence for the existence of FEEL as a separate meaning of MA is the evidence from the modifying "body-part noun" specifier construction, to which I now turn.

9. Modifying "body-part nouns"

An interesting way to test whether two putative meanings are truly distinct in a language is to see whether the two senses can occur contrastively. In elicitation I attempted to translate sentence (26a) below into Bunuba. My reasoning was that if MA simply had a single meaning, undifferentiated between THINK and SAY, this would not be possible. The Bunuba sentence would be anomalous, as indicated by (26b).

(26) a. I know what you said but what are you thinking?
b. I know what you *MA*ed but what are you *MA*ing?

I was surprised instead to be given the sentence presented as example (27). Notice that an expression combining *gun.gulu* 'head' and MA has been used to render the meaning THINK.

(27) *Ngayini binarri nganggu thangani*
ngayini binarri nganggi thangani
1SG.PRO know 2SG.OBL mouth/words

nganggu gun.gulu nginjaga ginjima?
nganggu gun.gulu nginjaga gi-nj-i-ma
2SG.OBL head I/I.PRO PRES-2SG.S.NONFUT-INS-MA
'I know your mouth/words but what is your head thinking?'

On further investigation it emerged that, in similar fashion, the nouns *thangani* 'mouth' and *guda* 'stomach' can be combined with MA to unambiguously distinguish THINK, SAY, and FEEL, respectively: [MA + head] = THINK, [MA + mouth] = SAY; [MA + stomach] = FEEL. That is, although the sentence *Ngaanyima miy?* could mean either 'What did she say?', 'What did she think?' or 'What did she feel?', if these body-part nouns are added only a single interpretation is possible in each case. The construction [MA + 'body-part noun'] creates a non-ambiguous construction in which the senses SAY, THINK, and FEEL can be differentiated.

(28) *Ngaanyima miy thangani?*
ngaanyi=ma ø-ma-iy thangani
I/I.PRO=I/I 3SG.S-MA:SAY-PAST mouth
'What did s/he say?'

(29) *Ngaanyima miy gun.gulu?*
ngaanyi=ma ø-ma-iy gun.gulu
I/I.PRO=I/I 3SG.S-MA:THINK-PAST head
'What did s/he think?'

(30) *Ngaanyima miy guda?*
ngaanyi=ma ø-ma-iy guda
I/I.PRO=I/I 3SG.S-MA:FEEL-PAST stomach
'What did s/he feel?'

Regarding the [MA + stomach] combination, it is important to note that this is not confined to reference to one's stomach, in the literal sense, or even to bodily sensations. That is, it does not mean 'feel something in the stomach' or even 'feel something in the body', but rather FEEL in a non-localised and undifferentiated sense which can be applied to emotional reactions as well as to

sensations. Similarly, I believe that [MA + mouth] is not confined to reference to the mouth, in the literal sense, but can be used about, for example, saying something by means of gestures. More research on this is required.

It is true that this "modifying body-part noun" construction was found through elicitation, and has not been attested in natural texts (presumably because hearers are commonly able to disambiguate the senses of MA from context). Nonetheless, I am certain that the construction is a valid one, which may be employed to explicitly disambiguate the senses when and as necessary.

10. Distinctive profiles based on syntactic/semantic criteria

Based on the criteria discussed above, a distinctive profile of each of the five semantically primitive senses of MA can be compiled. Although no single criterion distinguishes all of the senses from one another, each sense has a unique profile overall.

Profile of MA:HAPPEN

- Takes only 3SGS/3NSGS core pronominal prefixes i.e., 'something happens' or 'some things happen'
- Subject must be inanimate; oblique pronominal suffix referents can be animate or inanimate
- Semantic roles cross-referenced by oblique pronominal suffix: undergoer (to X) or purpose (for X)
- Can take *yiningga* 'just.like.that' as an adverbial modifier.

Profile of MA:SAY

- Takes the full complement of core person/number pronominal prefixes, but subject must be animate
- Can frame reported speech
- Semantic roles cross-referenced by oblique pronominal suffix: addressee (to X) or topic (about X)
- Takes the full complement of person/number oblique pronominal suffixes, referents can be animate or inanimate
- Takes *thangani* 'mouth' as a "body-part modifier" specifying the verb as SAY.

Profile of MA:DO

- Takes the full complement of core person/number pronominal prefixes; subject can be animate or inanimate
- Semantic roles cross-referenced by oblique pronominal suffix: patient (to X), instrument (with X), or accompaniment (with X)
- Takes the full complement of person/number oblique pronominal suffixes; referents can be animate or inanimate.

Profile of MA:THINK

- Takes the full complement of core person/number pronominal prefixes; subject must be animate
- Oblique pronominal cross-referencing is not available; instead, the transitive allolex *li<u>ng</u>a* + RA2 for topic role
- The object topic of *li<u>ng</u>a* + RA2 can be animate or inanimate
- Takes *gun.gu<u>l</u>u* 'head' as a "body-part modifier" specifying the verb as THINK.

Profile of MA:FEEL

- Takes the full complement of person/number oblique pronominal suffixes; subject must be animate
- Takes *gu<u>d</u>a* 'stomach' as a "body-part modifier" specifying the verb as FEEL.

11. Concluding remarks

In broad perspective, the results of this study have far-reaching implications for the analysis of other coverb + auxiliary constructions in Bunuba (see Knight 2004), and for the interpretation and analysis of similar complex predicate constructions in other Australian languages. These further implications lie beyond the scope of the present chapter. From the point of view of the present volume, the main lesson of the analyses undertaken in this study is that semantic primes may have discrete and distinct exponents even in a language such as Bunuba, which seems on the surface to exhibit extreme "under-differentiation" of a set of a semantic primes. In such a situation, what is needed is careful use of language-internal evidence to disentangle the different senses and establish that each constitutes a distinct lexical unit in the language.

Abbreviations

1	First person	DUB	dubitative	OBL	oblique pronominal (bound or free form)
2	Second person	EXCL	exclusive		
3	Third person	FUT	future	O	transitive object: grammatical function
A	transitive subject: grammatical function	HAB	habitual		
		I/I	interrogative/indefinite	PAST	past
ABL	ablative	INS	insert	PRES	present tense
ADV	adverb	IRR	irrealis	PRO	core pronoun (free form only)
ALL	allative	ITER	iterative		
CV	coverb	LOC	locative	R	restricted
DEM	demonstrative/ deictic pronoun	NONPAST	nonpast	S	intransitive subject: grammatical function
		NSG	non-singular		
DL	dual (verb participant number marking)	NONFUT	non-future	SG	singular

Notes

1. The full set is as follows – intransitive: MA, NA, RA, NI, WU; transitive: YHA, WU2, NGARRI, RA2, MA2. Prior to Rumsey (2000), only six auxiliary roots were recognised, mainly because the existence of pairs of homophonous roots RA and RA2, MA and MA2, and WU and WU2, had been overlooked. The strongest formal criteria for identifying distinct roots are: (i) that the respective members of each pair take different sets of tense/mood suffixes, and (ii) that they differ in transitivity. The underlying form of each auxiliary appears on the surface when the pronominal prefix is ø.
2. Rumsey (1994) mentions the polysemous nature of MA as a simple verb, but he does not discuss it in any detail. Rumsey (1990) also discusses the role of this type of construction in the language Ungarinyin, where the cognate form *-ma-* performs similar functions. He says that in both languages MA may convey various meanings such as 'think', 'want', and 'get ready to'.
3. It is not clear from Ford's description whether the senses of 'do' and 'feel' expressed by the *me* auxiliary are equivalent to those in Bunuba, but Ford's glosses suggest this is the case.
4. Notice in the last line of Table 4 that one possible role for MA:DO is the purposive (including beneficiary role), but this can be ignored for present purposes.

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