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Temporal Reference, Tense and Aspect in Australian Aboriginal Languages

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Introduction¹⁾

The continent of Australia has been continuously occupied by Aboriginal people for at least 50,000 years, during which time they have developed complex economic, social, cultural and linguistic systems. As Sutton and Anderson (1988:5) note: “[b]ecause of their relative cultural isolation, Aborigines were forced to develop their own solutions to the problems of human adaptation in the unique and harsh Australian environment. The result was a stable and efficient way of life”.

At the time of first European contact with Australia in 1770, the whole continent was occupied by Aboriginal people, divided into about 700 ‘tribal’ groups and speaking approximately 250 different languages (Dixon 1980, McGregor 1994). Over the past two hundred and twenty years, in many areas, especially the south-east and south-west which were settled early, the transmission of traditional social and cultural knowledge, including language, has been broken and a great deal of knowledge has been lost. It is only in the last twenty five years that reliable descriptions of Australian Aboriginal languages have become available, and only in the past five years that extensive lexicons for a few languages have been published. There has been intensive linguistic research on Aboriginal languages since the early 1970’s, much of it carried out by R.M.W. Dixon and his students, however, until recently the major focus of that work has been on morphology and syntax. The languages have become justly famous for their split-ergativity and complex interactions between semantic categories such as animacy and nominal case coding. They are also well known for their free word order and non-configurational syntax. In comparison, concepts typically associated with verbal categories, such as tense, aspect and mood, have been largely neglected. Thus, Dixon’s 1980 standard reference *The Languages of Australia* has just two pages of brief notes (pp 380–1) on this area, and Blake’s 1987 *Australian Aboriginal Grammar* contains nothing. (Australian data has also been largely ignored in the general typological literature on tense and aspect — Dahl 1985, for example, mentions only two Australian languages, Alawa and Bandjalang (but cf. Comrie 1985)). Even as recently as

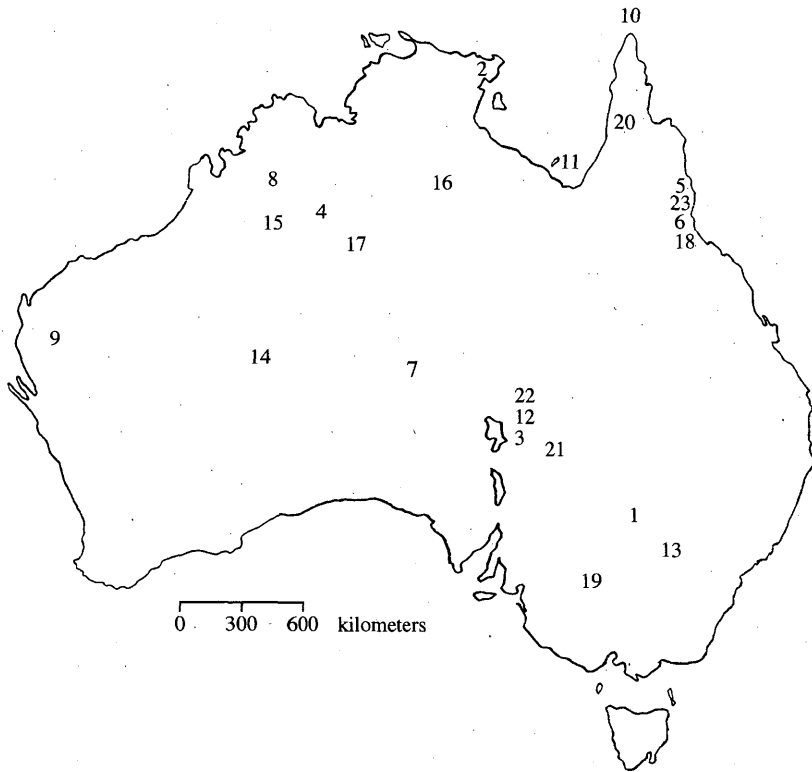


Figure 1 Location of languages mentioned in the text

- | | | | |
|-------------------|--------------------|---------------------|-----------------|
| 1. Baagandji | 2. Daartiwuy | 3. Diyari | 4. Djaru |
| 5. Dyabugay | 6. Dyirbal | 7. Eastern Arrernte | 8. Gooniyandi |
| 9. Jiwarli | 10. Kala Lagaw Ya | 11. Kayardild | 12. Ngamini |
| 13. Ngiyampaa | 14. Pitjantjatjara | 15. Wamatjarri | 16. Wambaya |
| 17. Warlpiri | 18. Warrgamay | 19. Wemba-Wemba | 20. Wik-Mungkan |
| 21. Yandrruwandha | 22. Yarluyandi | 23. Yidiny | |

1991, it was possible to find the following in a description of the Dyabugay language (Patz 1991:279):

“PRESENT, FUTURE, PAST. This three-term tense system, while somewhat unusual among the languages of the region, has quite normal application.”

Fortunately, other recent grammatical studies show more sensitivity to issues of temporal reference, and recently published dictionaries have sufficient materials to enable us to begin the cross-linguistic study of this important semantic area.

In this paper I will draw on information from a few well-described languages, plus data from my own work on Diyari, spoken in central Australia, and Jiwarli,

spoken on the coast of Western Australia. The languages of Australia have been classified into two major groupings: Pama-Nyungan, which covers the southern nine-tenths of the continent, and non-Pama-Nyungan (itself a highly diverse group, sometimes divided into twenty-two language families) spoken in the far north (the deeper relationships of these 'families' and whether they are all ultimately genetically related are matters requiring further detailed research). Most of my examples are drawn from Pama-Nyungan languages; I hope that the present work can be expanded in future to include information on the non-Pama-Nyungan group.

1. Social and Cultural Background

In this section I present basic relevant information about the social, cultural and historical background of Australian Aboriginal peoples. This will provide us with essential anthropological background for the discussion of temporal reference and contextualise the description of lexical expressions and verbal categories below. The discussion here is only an outline sketch of a complex area; for more details see Berndt and Berndt 1992, Maddock 1974, Elkin 1974, and Broome 1982.

There is no single social or cultural system that characterises all Australian Aboriginal groups, but rather we find considerable diversity across the different environments that they occupied. However, the major theme in all Aboriginal social organisation was kinship, with every individual in the social universe classified as kin, linked either by blood or marriage to one another. Kinship relations provided an important locus for legal, religious and social aspects of community life. It is important to emphasise that there are a variety of Aboriginal kinship systems, however all of them are generationally bounded and operate in a cyclical fashion. Typically the lexical field of kinship is bounded two generations away from ego's generation — thus the terms for grandparents and grandchildren are the same. In this sense them, the kinship systems differ from those with open-ended ancestral descent. Interestingly, I know of no instances in Australia where kin terms have semantic or metaphorical uses in the domain of temporal reference (whereas locational items and body part terms do, as discussed below).

Aboriginal economic organisation was based on hunting and gathering, with nomadic seasonally-based utilisation of the environmental range occupied by each local group. As Sutton and Anderson (1988:7) note:

"Australian Aboriginal economies were predicated on mobility and a corresponding absence of concern with accumulation of goods and property. Material culture was kept to a minimum and was simple, ingenious, and multifunctional ... People undertook regular seasonal moves over particular areas to exploit certain resources and to participate in ceremonial gatherings with other groups."

For economic, and also religious reasons (see below) Aboriginal people had extremely close relationships with the land. Linguistically, we find the economic system reflected in the terms which have been lexicalised in various languages for reference to time and seasons (see 2.1 below). We will also see that there is an intimate connection in a number of languages (perhaps all?) between temporal reference and spatial reference (see section 3).

Aboriginal religious life was extremely complex and varied across the continent, but a common bond for all communities was what is termed in English "The Dreaming", a religious dimension that infuses all of life. An excellent outline of the central concepts here can be found in Sutton and Anderson (1988:15) who distinguish Dreamings and the Dreaming:

"Dreamings are Ancestral Beings. In that sense, they both come before, and continue to inhere in, the living generations. Their spirits are passed on to their descendants ... Groups of people who share the same dreamings may constitute totemic corporations, sets of people bonded by a common link to the spiritual. Particular Dreamings that function in this way as signs of groups, emblems of local and corporate identity, provide much of the spiritual underpinning of traditional communal title to land. ... In the myths, Dreamings are born, live, and sometimes die, but they are also eternally present. The spiritual dimension or domain in which they have their existence is the Dreaming, sometimes referred to as the Dreamtime. Because it is foundational, the Dreaming is sometimes described as the beginning of the world. This was the period when the Ancestral Beings moved about, forming the landscape and creating the plants, animals and peoples of the known world ... The Dreaming is thus the generative principle of the present, the logically prior dimension of the now"

Even now the ancestral past lives in the modern features of the landscape — as people travel they can mark their progress by places which have names, shapes, and special characteristics that index the Dreaming. For example, a certain place might be called "he threw it down" in reference to a particular act of a particular Ancestral Being. The landscape is thus like a map that indexes the distant past, and daily life recreates or is infused with the ancestral period. People do not celebrate the Ancestral Beings, but live them. This aspect of (pre-) temporality and sense of continuity of the present with the past through the religious and social dimensions has significant linguistic consequences, as we will see below. Both the lexical expression of time, and the systems of verbal categorisation in different languages show semantic contrasts that appear to reflect this conceptualisation of time.

2. Lexicalisation of Temporal Reference

In this section I examine the lexical patterns of expression of temporal categories in Australia. In his general introduction to the structure of Australian Aboriginal languages, Dixon (1980: 283) says:

“[t]here are two kinds of lexical root that provide temporal qualification of a sentence — those indicating duration (‘for a long time’, ‘for a short while’, ‘all the time’) and those referring to some point in time (‘evening’, ‘tomorrow’, ‘many years ago’, and so on). Only point-time words will take inflections, as a rule, and these two types of temporal qualifier can be grouped together as a single part of speech only on semantic grounds.”

Regarding the semantics of point-time elements, Dixon (1980:283) states:

“[t]ime qualifiers always have ‘today’ as one semantic focus — giving ‘tomorrow’, ‘yesterday’ and so on. Some languages have ‘now’ as a further focus; in Dyrirbal, for instance, there are no terms for ‘morning’ or ‘afternoon’, only for ‘earlier on today’ and ‘later today’.

Our survey of the lexicons of a number of languages suggests that Dixon’s general point is correct, however we can refine his generalisation considerably in the light of currently available data.

In all languages there are both deictic and non-deictic temporal expressions. Deictic expressions are shifters (Jakobson 1957) that rely for their reference on the moment-of-speaking; in the terminology of (Comrie 1985:56) we find ‘absolute time reference’. Non-deictic temporal expressions have more-or-less fixed reference regardless of the setting of the speech act — here we find such things as terms for seasons and parts of the day. In all Australian languages there is a single term for the temporal deictic centre, however its reference is always imprecise and it shows great polysemy depending on the contrastive context (ranging over ‘now, today nowadays (in contrast to the past)’).

It is important to emphasise, however, that the reference of temporal lexical items in all the languages we surveyed is rather vague and imprecise, rather than them being used to refer to fixed intervals or points of time. As Eckert and Hudson (1988: 184) point out for Pitjantjatjara:

“words and expressions ... that do express time are usually not as precise as English words (though of course English can be vague too, eg. ‘Sometime I’ll do it’).”

In all Australian languages 'point time' words then have interval reference rather than strict point or punctual specification. Examples of this will be presented below.

There are several semantic bases for lexical time words:

1. *seasons* — all languages have terms for seasonal intervals, with the minimal system being binary in the central Australian languages (see 3.1). Note that reckoning of year intervals is always calculated seasonally in Australia;

2. *now versus past* — all languages have a shifter whose core reference is an interval that includes the moment of speaking in contrast to situations that held in the past. The past in all languages is bounded by 'The Dreaming'. Languages may also have a contrast of *now versus future*, but the term for future tends to have relatively immediate reference. Some languages also have ways of coding degrees of past time reference, though none, with the exception of Dyirbal, codes degrees of future reference;

3. *diurnal* — all languages have a term for 'day' versus 'night', though in many the term for the diurnal base is either the same as or derived from the term for 'sun' or 'warmth'. All languages except Ngyiyampaa have lexical terms for single diurnal units anterior ('tomorrow') or posterior ('yesterday') to the diurnal deictic centre ('today'), however in a number of languages these terms are polysemous and also have reference to intervals **within** the span of a single day. Some north-east Queensland languages (such as Dyirbal and Warrgamay) lack non-deictic terms for parts of the day, however most languages do segment the day interval. It is clear that in all languages the core of the day is an interval (**not** a point) from late morning to early afternoon that includes the hottest period of the day. Occasionally, this interval can stand for the whole day itself (see 2.4 below).

A number of authors report temporal reference with a lunar base, however it seems that this is always marginal (there are never compounds involving 'moon', for instance, though many exist for 'day'). Reported instances may also be due to contact with speakers of English. Also, as McGregor (1994a: xxi-xxii) notes: "Australian languages generally have no words for units like seconds, minutes or hours", an observation that is hardly surprising given the Aboriginal cultural background.

In the following sections we examine the terms we have found for the various 'points' and intervals of time.

2.1 Seasons

As might be expected, the range of expressions for seasons varies according to the location in which the language is spoken. South of the Tropic of Capricorn in the central and western regions (which are primarily desert) we find a contrast only

between 'summer' and 'winter', with the terms for these commonly being the adjectives for 'hot' and 'cold' respectively. Thus Diyari has *kilpa* 'cold, winter' and *waldrra* 'hot, summer'. The term for 'year' in Diyari is a compound *kilpa waldrra* 'cold hot' or 'winter summer'. Pitjantjatjara similarly has (Eckert and Hudson 1988:194):

<i>nyinninga</i>	wintertime, frost, ice
<i>warr</i>	winter time, cold
<i>kurli</i>	summer, heat

In addition there is a specific term *pirriyakutu* for 'spring time, time of the warm winds from the north-west', and two compounds based on *wiltja* 'shade, shadow':

<i>wiltja wara</i>	time of long shadows
<i>wiltja nyina</i>	time when one sits in the shade

More distinctions are made among the northern languages that are spoken in areas subject to tropical climate and the annual monsoon (called 'The Wet' in Australian English). Thus, McGregor (1994a:xxi-xxii) reports that for a language of the Kimberley region: "[i]n Walmajarri, for example, three seasons are distinguished: *parrangka* 'hot season', *yitilal* 'wet season', and *makurra* 'cold season'". Years can be enumerated using *yitilal* 'wet'. (See also McGregor 1994b:208) for the same distinctions in Guniyandi.) Similarly, in Wik-Mungkan spoken on Cape York peninsula, we find (Sayers 1994:369) *kaap* meaning 'wet season, year'. The most elaborate specification for seasons comes in Arnhemland languages such as Daartiwyu (Ganambarr 1994:258-9):

<i>mirdawarr</i>	tuber-growing season (March-April)
<i>dharratharra</i>	season between May and July (cold and windy)
<i>rarranhdharr</i>	season between August and December (hot and dry)

2.2 Days

All Australian languages have a word for 'day' that is contrasted with 'night'. It is clear that in many languages the usual terms for 'day' are also used for reference to 'sun', or else are based on or incorporate terms for the sun, ie. the base of reference is a diurnal one. In some languages also, we find 'heat' used for day reference (see also above for reference to seasons and years in Diyari). A recurrent theme in many languages is a connection between space and diurnal time, with 'day' reference replacable with a term that means 'space, region, country, camp'. Thus, McGregor (1994a:xxii) notes: "in Gooniyandi the term *riwi* 'camp, place' is used to refer to a day (this is presumably based on the association of a camping place with a day)". In the Eastern Arrernte dictionary (Henderson and Dobson 1994) compounds for parts of the day are given with either *arlte* 'day, light' or *apmere*

'space, place, camp' as their first part.

All Aboriginal languages lexicalise diurnal units and have terms for absolute time reference based on the day including the moment of speaking ('today') versus other days. The minimal system of day-based reference seems to be found in Ngiyampaa (Donaldson 1994:37) which has a single term *kampirra* meaning 'a day either side of the reference time, that is yesterday or tomorrow'. In the respect registers of Dyirbal and Yidiny (called Dyalnguy) we find a Ngiyampaa-type contrast (apparently under the pressure of minimal lexical expression characteristic of this particular speech style), as Dixon (1972:313) mentions:

"Dyalnguy [respect register] classes together Guwal [ordinary register] words referring to 'a certain time away in the past' and 'the same time away in the future', That is, it has *ganba* for both 'earlier on today' and 'later on today' and *ganbagabun* (literally 'another *banga*') for 'yesterday (or any further time in the past)' and 'tomorrow (or any further time in the future)'. (There are also one or two other, more specific Dyalnguy time words.)

The rarity of such systems in Australia confirms Comrie's (1985:11) comment that: "[i]t is rare to find lexical items with such general semantic characterisation, except for 'now' in relation to the present".

Most Aboriginal languages have a simple three-term diurnal system contrasting 'yesterday', 'today' and 'tomorrow' (with the intervening nights as divisions), each lexicalised as a monomorphemic form. In Diyari, we find the following three-term system:

<i>waldrrawirti</i>	yesterday
<i>karrari</i>	today, now, soon
<i>thangkuparna</i>	tomorrow

Note however that 'yesterday' is complex: *waldrra* is 'heat' and *wirti* is 'through'. In addition, the reduplicated form *thangkuthangkuparna* is used for segmentation of the day and means 'morning'.

No Australian language has a monomorphemic term for reference to a day either before or after 'yesterday' and 'tomorrow' respectively (cf. for example, Japanese *asatte* 'day after tomorrow' and *ototoi* 'day before yesterday'). It may be that this relates to the simple system of numerals typically found in Australian languages; most have monomorphemic forms for 'one', 'two' and 'three' only. The sequence 'yesterday, today, tomorrow' forms an interval of three diurnal units.

The term for the deictic centre of diurnal reference, like Diyaki *karrari* 'today', in very many languages is polysemous and also refers to a shorter interval around (before and after) the moment of speaking, ie. 'now'. For example, in Jiwarli

kuwarti can be used for an event presently in progress, as in²⁾:

- (1) *Ngunha juru kuwarti warnti-iniya*
 that sun now come out-imperfDS
 ‘The sun is rising now.’ [JIJBAN9p162s7]

and also to mean ‘now, for the first time’, as in:

- (2) *Nhanya-rri-nyja-rru pula kuwarti maarru*
 see-recip-past-new 3dl.nom now long time
 ‘They saw one another for the first time in a long time.’ [JIJBAN8p129s6]

or ‘now, this time’ (in contrast to past occurrences of the same event), as in:

- (3) *Warri yana-nyja-rni kuwarti jurruru-wu ngurnu*
 not go-past-hence now Jurruru-dat that.dat

piyal-ku warriyangka-wu piyal-ku jiwarli-yi
 language-dat Warriyangka-dat language-dat Jiwarli-dat
 ‘[You] didn’t come this time for Jurruru, Warriyangka and Jiwarli languages.’
 [JIJBAPAT67s6]

It is also used for an immediately past event, as in:

- (4) *Yuwal yinha yana-nyja-rni kuwarti-thu*
 wind.nom this.nom go-past-hence now-top
 ‘The wind has come now.’ [JIJBAM12p80s2]
- (5) *Kuwarti nguwan-arri-nyja thuthu*
 now sleep-inchoat-past dog
 ‘The dog has just gone to sleep.’ [JIJBAN12p50s1]

It can indicate an immediately future event that is imminent, as in:

- (6) *Kuwarti yinha nhurra-rla karla-lkarri*
 now this.acc 2sg-allat send-intent
 ‘[We’ll] send this to you now.’ [JIJBAT67s34]

In addition, we find *kurwarti* used with more general reference to mean ‘nowadays’, as in:

- (7) *Kuwarti-thu ngunha kumpa-inha warri-rru warnti-ja*
 now-top that.nom live-pres not-new grow-past

wampurra-thu *parna-ngka-thu*
feather-top head-loc-top

'Nowadays he lives with no feathers growing on his head.' [JIJBPAT66s4]

In most languages this last meaning suggests a contrast of 'nowadays' not to the future, but to the past. Eckert and Hudson (1988:184-5) give data for the Pitjantjatjara term *kuwarri* which shows the same polysemy.

2.3 Periods larger than days

Most languages have just a few words for referring to time periods beyond yesterday, and in all they appear to be interval reference, not point time. Every language has a way of referring to the time of the Dreaming (the logical bound of the past in all Aboriginal societies), but very few have terms for the future (beyond immediate future covered by the word 'now' or an interval meaning 'short while'). Thus Pitjantjatjara has:

<i>mungartu</i>	'sometime ago'
<i>irriti</i>	'long time ago'
<i>ngula</i>	'later (a few days to a few years in future)'

As Eckert and Hudson (1988:187) point out: "exactly where *irriti* 'long ago' takes over from *mungartu* 'some time ago' is not clear cut and depends somewhat on how one feels about the length of time that has passed. If it feels like a long time ago use *irriti*".

Dyirbal appears to have the most unusual and elaborate system of coding time reference beyond days. Dixon (1972:115) gives the following time words:

<i>bulurru</i>	very many years ago (the time of mythical creators)
<i>bandagay</i>	many years ago (of the order of 100 years ago or so)
<i>gubila</i>	some time ago (any time from about a month to about 50 years)
<i>ngudangga</i>	the other day (up to a month or so ago)
<i>ngulga</i>	tomorrow
<i>jada</i>	in a few days time
<i>baray</i>	next week

Interestingly, Diyari and its neighbours do not have such an elaborate **lexical** means of expressing relative past temporal reference, however they do have **grammatical** means of doing so (Diyari by means of auxiliary verbs, the other languages by means of inflections).

2.4 Segments of the day

Most Aboriginal languages have non-deictic lexical items for segments

(intervals) of the day, with the exception of north-east Queensland languages such as Dyirbal and Warrgamay (Dixon 1972, 1980, 1981) that have only deictic terms. Thus Dixon (1972:115) gives Dyirbal *janjurru* 'earlier on today' (ie. the segment of the day before the moment of speaking) and *gilu* 'later on today' (ie. the segment of the day after the moment of speaking). In all the descriptions I surveyed, the day is centered on an interval that ranges from late morning to early afternoon and includes the hottest period of the day (during which hunting and gathering activity usually stops). Thus, Jiwari has *karnta* and Pitjantjatjara has *karlarla* 'midday' for this period. In a number of languages we find compound forms, eg. Diyari *diji mirri* 'sun above', and Arrernte *arlte mpepe* 'sun middle'. Evidence that this is the diurnal centre comes from Pitjantjatjara where we find (Eckert and Hudson 1988:193) that when followed by *kutjupa* 'another' *karlarla kutjupa* means 'day after tomorrow' (**not** 'another midday' — note that 'tomorrow' equals 'morning' in this language).

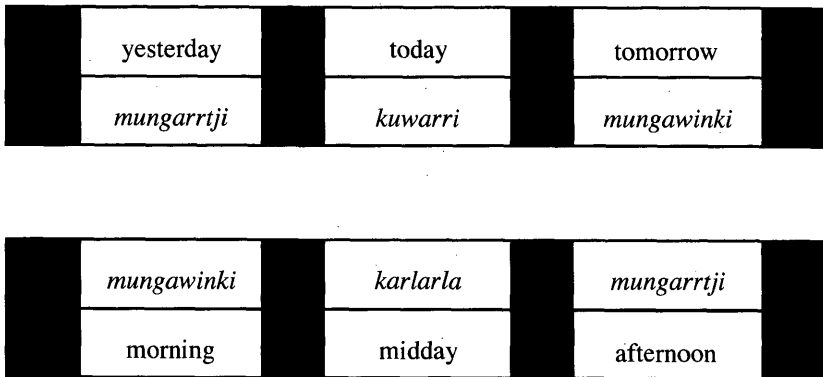
In most languages the lexical items for periods before and after the mid-day interval are simplex, as in Jiwari *mntu* 'morning' and *pirlurn* 'afternoon', or Eastern Arrernte (Henderson and Dobson 1994):

<i>ingweleme</i>	morning (sunrise to late morning)
<i>anwerre</i>	afternoon (middle of the day till sunset, especially mid-afternoon)

Additional simplex lexical items may also exist (eg. for 'dawn' or 'twilight' — an example is Walmatjarri *rakarra* 'half light of dawn' (McGregor 1994:xxii)), however it seems in all the languages I surveyed that 'sunrise' and 'sunset' are always compounds, and always involve verbs meaning 'emerge' and 'enter' respectively (note that these are always intransitive motion verbs **not** transitive change of state verbs like 'open' or 'break' that we find in many other language groups). Thus, Diyari has *diji durnka* 'sunrise' and *diji wirrhi* 'sunset' (where *durnka* is the verb root 'to emerge, come out', and *wirrhi* is the root 'to enter' — in Diyari all verb roots are normally inflected and cannot appear bare, except in these two compounds). In some languages (eg. Wemba-Wemba (Hercus 1994:121)) the corresponding collocations have **spatial** not temporal reference, meaning 'east' and 'west' respectively.

In Pitjantjatjara the terms for diurnal segments are polysemous and are also used for absolute reference to diurnal intervals before and after today. Thus Eckert and Hudson (1988:189) say "[t]he word *mungawinki* covers two time periods in English, namely 'this morning' and 'tomorrow (morning)'. The tense of the verb ... usually gives the clue as to whether 'this morning' or 'tomorrow' is meant". Also, "*mungarrtji* behaves similarly to *mungawinki* and can cover for English 'this afternoon' and 'yesterday". Which period of time is meant again depends on the time of speaking and the verb tense, however there is some evidence

for the genuine polysemy (rather than vagueness) of these terms. Thus *mungawinki mungarrti* means 'tomorrow afternoon' (not 'morning (and) afternoon'), and also with *kutjupa* 'another' we get *mungawinki kutjupa* 'morning after next' (cf. *karlarla kutjupa* 'day after next') and *mungarrti kutjupa* 'day before yesterday'. Interestingly, if we draw time lines for these intervals, it appears that anteriority and posteriority relative to the temporal anchor are reversed between the domains of day and segment of day (the black periods in the following diagrams indicate divisions — for the durnal system this is the night, while for the day segment system the divisions are notional):



In Jiwarli *untu* is polysemous for 'morning' and 'tomorrow' (like Pitjantjatjara *mungawinki*) however there are separate terms for 'afternoon' (*pirlurn*) and 'yesterday' (*parnarra*). This also seems to be a common pattern in Australia and we can make the implicational generalisation that if a language has polysemy for 'afternoon, yesterday' it will also have it for 'morning, tomorrow' (though not necessarily vice versa).

3. Time and Space

A recurrent theme in Australian languages is an intimate connection between the expression of time and the expression of space. We see this in several ways: through the lexicon, metaphor, and morphology (where case markers have both locational and temporal functions). Examples of this can be found in Jiwarli, Arrernte and Dyirbal.

In Dyirbal there are deictic words which can be used to code both location in space and location in time. Thus, Dixon (1972:115) says:

"[t]here are two words having the form of noun or verb markers (normally providing locational qualification for a phrase) that can be employed with

transferred meaning as time qualifiers for simple sentences. There are *bangum* ‘and then’ and *yanggunbayjigu* ‘next week’ ... Note also that the time qualifier *gala* ‘earlier on today’ in M[amu dialect] is identical with the bound form *gala* ‘vertically up’ ... Clearly, ‘past time’ is correlated with ‘up’ and ‘future time’ with ‘down’ in the Dyirbalngan worldview. (The examples given appear to be the only locational forms that can have time meaning.)”

Note that *bangum* is an adverbial element (Dixon’s “verb marker”) that is an ablative case form meaning ‘from there’, while *yanggunbayjigu* is a dative case form of a nominal determiner composed of *yanggum* ‘visible and here (near speaker)’ plus an affix *-bayji* ‘short distance downhill’. Notice the interrelation of the spatial and temporal deictic dimensions expressed in these forms.

In Eastern Arrernte there a couple of temporal expressions that use the distal demonstrative *nhakwe*:

<i>arlte arrekwerle nhakwe</i>	day after tomorrow	day + ahead + that (distant)
<i>apmere nhakwe</i>	last night	place + that (distant)

In Jiwarli the proximal demonstrative *yinha* ‘this’ is used for ‘now’ and *ngunha* ‘that’ is used for ‘then’. Thus, with the temporal clitic *-purra* (see 5.1.3 below) we have *ngunhapurra* ‘then, at that time’. Examples are:

- (8) *Yinha-rru ngatha yukarta-lu ngapa-inha*
 this-new lsg.nom white paint-erg paint-pres
 ‘Now I am painting (myself) with powdered gypsum.’ [JIT44s30]
- (9) *Mantharta kumpa-ja ngunha-purra-thu.*
 man sit-past that-temp-top
 ‘At that time (he) was a man.’ [JIT40s3]

4. Grammatical Expression of Time

In this section I will make some preliminary remarks on the grammatical expression of time in some selected Australian languages. There are **three ways** that we find time grammaticised in the various languages:

1. a few eastern Australian languages, eg. Ngiyampaa, have verbal derivational affixes that express concepts such as ‘action done at night’ or ‘action done in the morning’ (see Donaldson 1980);

2. through the grammatical category of tense, which is typically associated with verbs or verb phrases in Australian languages. Some central Australian languages such as Warlpiri, Wambaya and Djaru have complex systems of coding tense that

involve an interaction between verbal inflections and a sentence level constituent (the AUXiliary), such that the semantics varies according to the particular inflection-AUX combination. In addition, tense in Kayardild (Gulf of Carpentaria — see Evans 1994, 1995) and also some dialects of Baagandji (western NSW) is reflected in nominal expressions (in the Gurnu dialect of Baagandji pronouns vary for tense, while in Kayardild non-subject words carry an extra layer of case marking (called ‘modal case’ by Evans) that reflects tense/mood categories;

3. in many languages there are affixes that can attach to inflected words of any grammatical category (called ‘clitics’ in the Australianist literature) which typically code informational status (old or new information, etc.), evidentiality and other pragmatic categories. In many languages at least one or more of these affixes relates to temporal coding.

In his major survey of Australian languages, Dixon (1980:380) has the following remarks about tense systems:

“[s]ome languages appear to have past, present and future inflections. There are languages in which past and present, or future and present, fall together; Dyirbal, for instance has future *-ny* opposed to non-future (i.e. present-past) *-nyu ~ -n* while its neighbour Yidiny has past *-nyu ~ -rrnyu* opposed to non-past (i.e. present-future) *-ng ~ -l ~ -r*. It is common for there to be a number of inflections covering future time — say, ‘purposive’ indicating obligation (‘should’ or ‘must’) and irrealis indicating intention or prediction (‘will’).”

Examination of the grammars of various languages suggests that the categories often labelled ‘tense’ also frequently mix aspectual and modal semantics. Thus, Comrie (1985:39) points out that in Dyirbal the ‘non-future’ is used for actual situations, while the ‘future’ is used both for situations predicted for the future and also for generic statements induced to be generally true, and;

“despite the terminology adopted for Dyirbal, which identifies the two tenses as present-past and future respectively, the distinction between them is more accurately described as one of mood, namely realis versus irrealis respectively.”

It appears then that Dyirbal does not express tense in its verbal inflections (see also Comrie 1985:45, 49). It is also possible that the Yidiny system mentioned in Dixon’s quotation (cf. also Dixon 1977) is also not tense, but an aspectual contrast between perfective and imperfective. Further research on this matter is necessary.

In the following sections I present descriptions of grammatical coding of temporal contrasts in two Pama-Nyungan languages, Jiwarli and Diyari. The

systems we find here are typical of many other Australian languages.

4.1 Jiwarli

The major means of grammatical coding of temporal reference in Jiwarli is through the verbal inflection system. Time is also indicated by means of the post-inflectional suffix *-purra*, discussed and exemplified below.

Jiwarli verb inflections show a major contrast between **main verb** inflections and **dependent verb** inflections. The main verb inflections code various tense/aspect/mood categories. Dependent verbs are hypotactically linked to a main clause and their verb carries an inflection that codes **relative tense** (ie. time reference with respect not to the moment of speaking, but with respect to the events depicted in the main clause upon which it is dependent) and other aspectual and modal information. In addition, for most of the dependent clause types, the inflection codes sameness or difference of reference of the subjects in the two linked clauses (ie. they show a switch-reference system).

Jiwarli inflections are signalled by suffixes attached to the verb. There are five lexically determined verb conjugations. Table 1 sets out the relevant inflections for typical verbs in each of the five conjugations.

4.1.1 Main verb inflections

There are seven main clause inflections which indicate various tense and mood distinctions:

(i) **usitative** — indicates some situation which habitually occurred at some distant past time ('used to ...'). This form frequently occurs in mythological texts, and in historical narratives describing traditional activities, as in:

- (10) *Warri panyi-laartu yanyja-martu-nha ngurra nganthurra-ju-ru.*
 not disturb-usit other-pauc-acc camp.acc 1pl-excl-erg
 'We never used to disturb other people's camps.' [JIT41s87]

(ii) **past** — makes some situation which occurred at any time before the present moment of speaking, from the distant to the recent past. Examples are (2)–(5) and (9) above, and:

- (11) *Nhurra-lu kurlkayi-rninyja-rru nhurra-mpa-wu mutuka-wu*
 you-erg hear-past-new you-dat-dat car-dat
 'Did you hear about your motor car?' [JIT24s1]

Examples (21), (24), (25) below also illustrate this tense category.

Table 1 Jiwari Verb inflections
Main clause Verb Inflections

Inflection	'eat'	'blow'	'see'	'enter'	'return'
Utitative	<i>thikalaartu</i>	<i>patharraartu</i>	<i>nhanyaartu</i>	<i>tharrpaartu</i>	<i>parlirraartu</i>
Past	<i>thikarninyja</i>	<i>patharninyja</i>	<i>nhanyanyja</i>	<i>tharrpanyja</i>	<i>parlirrinnyja</i>
Present	<i>thikanha</i>	<i>pathanha</i>	<i>nhanyanha</i>	<i>tharrpinha</i>	<i>parlirra</i>
Future	<i>thikalka</i>	<i>patharrka</i>	<i>nhanyara</i>	<i>tharrpira</i>	<i>parlirra</i>
Imperative	<i>thikanma</i>	<i>pathanma</i>	<i>nhanyama</i>	<i>tharrpama</i>	<i>parlirrima</i>
Irrealis	<i>thikanmararni</i>	<i>pathanmararni</i>	<i>nhanyamararni</i>	<i>tharrpamararni</i>	<i>parlirrimararni</i>

Dependent clause Verb Inflections

Inflection	'eat'	'blow'	'see'	'enter'	'return'
ImperfSS	<i>thikarnu</i>	<i>patharnu</i>	<i>nhanyangu</i>	<i>tharrpangu</i>	<i>parlirringu</i>
ImperfDS	<i>thikaniya</i>	<i>pathaniya</i>	<i>nhanyiniya</i>	<i>tharrpaniya</i>	<i>parlirriya</i>
PerfSS	<i>thikarninyjalu</i>	<i>patharninyjalu</i>	<i>nhanyanyjalu</i>	<i>tharrpanyjalu</i>	<i>parlirrinnyjalu</i>
PerfDS	<i>thikarninyjaparni</i>	<i>patharninyjaparni</i>	<i>nhanyanyjaparni</i>	<i>tharrpanyjaparni</i>	<i>parlirrinnyjaparni</i>
PurpSS	<i>thikaru</i>	<i>patharru</i>	<i>nhanyangu</i>	<i>tharrpayi</i>	<i>parlirra</i>
PurpDS	<i>thikalpuka</i>	<i>patharrpuka</i>	<i>nhanyapuka</i>	<i>tharrpapuka</i>	<i>parlirripuka</i>
intensive	<i>thikalkarri (ngu)</i>	<i>patharrkarri (ngu)</i>	<i>nhanyararri (ngu)</i>	<i>tharrpirarri (ngu)</i>	<i>parlirrirarri (ngu)</i>
Might	<i>thikalangu</i>	<i>patharrkangu</i>	<i>nhanyarangu</i>	<i>tharrpirangu</i>	<i>parlirrirangu</i>

(iii) **present** — has several functions, including present tense (where it marks some situation occurring at the moment of speaking), immediate future, non-past habitual, and generic (timeless truths). Examples are (7) and (8) above, and:

- (12) *Kuwarti-rru wirta-nyjarri juma-rti puni-a kartaju-la*
 today-new boy-pl.nom child-pl.nom go-pres night-loc

jurrinypi-rru.

walk about-imperfSS

‘Nowadays the boys and children go walking about in the night.’ [JIT41s47]

Further examples occur in (18)–(20) and (22) below.

(v) **future** — marks some situation which is predicted or expected to occur at a time later than the moment of speaking (and beyond the immediate future).

- (13) *Kumpa-ira ngatha muntu-rru yana-rarringu*
 stay-fut lsg.nom morning-new go-intent
 ‘I will stop and go tomorrow morning.’ [JIJBAN9p104s5]

- (14) *Wakararri-ra nhurra jirnti-ngka.*
 fly-fut you.nom sky-loc
 ‘Will you fly in the sky?’ [JIT38s4]

(vi) **imperative** — is used to code a command. The same inflection is used for positive and negative imperatives in Jiwari (negative sentences contain the particle *warri* ‘not’). An example is (see also (23) and (26) below):

- (15) *Tharti-ngku malha-nma ngunha kurtangara*
 quickly-erg press on-imper that.acc whirlwind.nom

puni-ya-rni-rru.

go-imperfDS-hence-new

‘Press them down quickly because there is a whirlwind coming.’

[JBAN9p139s4]

(vii) **irrealis** — indicates a situation which could (have) or should (have) occurred but, contrary to expectations, did not. An example is:

- (16) *Yungarra-rru yurruru wirntupinya-mararni.*
 self.acc-new almost kill-irrealis
 ‘(I) almost killed myself.’ [JIT58s13]

In Jiwari a pair of clauses in the irrealis can be linked to form a counterfactual

conditional sentence, as in:

- (17) *Nyirnta-thu wantha-nmararni kumpa-mararni.*
 here.loc-top put-irrealis stay-irrealis
 'If (they) had put it here (we) would have stayed here.' [JIT9s2]

4.1.2 Dependent verb inflections

In Jiwarli, as in many other Australian languages, hypotactically linked dependent clauses specify information about the background temporal or logical conditions for the main event (translating into English as if/when/because adverbial clauses) as well as background description of nominal referents (having relative clause like functions). These meanings are not functionally distinguished, but are contextually determined.

There is a three-way relative tense contrast for dependent clause verbs:

1. **relative present** — describes a situation happening at the same time as the main clause situation (and incomplete at that time, thus expressing imperfective aspect as well). There is a further distinction made here between same-subject and different-subject clauses. Examples of the two are (see also (15) above):

- (18) *Juma ngurnta-inha ngathi-ngu pipi-yi.*
 child.nom lie-pres cry-imperfSS mother-dat
 'The child is lying down crying for his mother.'

- (19) *Ngulu nhanya-ngu-manta kumpa-inha ngathurra-mpa*
 that.erg see-imperfSS-still sit-pres 1plincl-dat
mantharta-rla kumpa-iniya nyirnta nganthurru.
 man-allat sit-imperfDS here.loc 1plincl.nom
 'He sits watching us men while we sit here.'

2. **relative past tense** — describes a situation that happened before the time of the main clause situation (and was completed at that time, thus expressing perfective aspect as well). As with the relative present tense inflection, there is a further distinction made here between same-subject and different-subject clauses:

- (20) *Juma-rti purrarti mampu-martu ngurnta-inha ngurra-ngka*
 child-pl.nom woman.nom bone-pauc.nom lie-pres camp-loc
wirntu-rrinyjalu.
 dead-inchoat-perfSS
 'The children and the women were lying in the camp as a heap of bones after having (all) died.'

- (21) *Ngatha* *nhanya-nyja* *ngunha* *thuthu-nha*
 1sg.nom see-past that.acc dog-acc

kuntharti *wornta-rninyjaparnti.*

tail.acc cut-perfDS

'I saw the dog that had had its tail cut off.'

3. relative future tense — describes a situation temporally located after the time of the main clause situation (with the additional implicature that the two events are linked by intentionality and purpose). They commonly occur with motion verbs in the matrix clause. Again, a distinction is made between same and different-subject inflections, as in:

- (22) *Puni-a-ya* *ngatha* *ngurnta-yi-rru.*
 go-pres-exclam 1sg.nom lie-purpSS-new
 'I am going to lie down'. [JIT33s4]

- (23) *Kaji* *nhurra* *yana-ma* *mana-ngku* *ngurlu* *karla-rla.*
 try you.nom go-imper get-purpSS that-allat fire-allat
 'You try and go to get the fire!' [T38s70]

- (24) *Ngatha* *kanya-nyja-rni* *nhurra-lu* *kampa-lpuka.*
 1sg.erg bring-past-hence you-erg cook-purpDS
 'I brought it for you to cook.' [JIJBAN5p114s3]

These three relative tense categories are also found across the Pama-Nyungan group, as in Diyari discussed in 5.2 below.

Jiwarli has two additional modal categories marked with dependent verb inflections, the intensitive inflection (making an action that one intends to carry out) and the might inflection (marking some harmful situation that might result from an action — it is typically used in warnings). Note that neither codes switch-reference. Examples briefly illustrating their use are:

- (25) *Parlu-ngka* *kurla-rninyja* *nhanya-rarringu.*
 hill-loc climb-past look-intent
 '(They) climbed up the hill to look.' [T38s42]

- (26) *Yurni-nma* *juma-nha* *ngunha* *pilpu-ngku* *paja-lkangu.*
 call-imper child-acc that.acc snake-erg bite-might
 'Call the child or a snake might bite (him)!' [JIJBAN11p16s7]

It appears that the 'might' (or 'lest') inflection is a modal category found in all

Australian languages.

4.1.3 Post-inflectional suffixes

Jiwarli has a set of affixes that can be added to words of any grammatical category following their inflectional suffixes to code various pragmatic and discourse functions. Two of these are associated with coding temporal reference, *-rru* 'new information' and *-purra* 'temp'. The suffix *-rru* indicates that some new participant, frame, or situation is added to the discourse context. It can be frequently translated into English as 'now', although this is in the new information rather than the strictly temporal sense. Examples include (2), (7), (8), (11), (12), (13), (15), (16) and (22) above.

The suffix *-purra* is added to words that set the temporal frame of a sentence. It can be added to time adverbs, or nouns in the locative case to serve as a time adverb. The following are examples:

(27) *Ngatha* *nhurra-nha* *wantharninyja* *parnarra-purra*
 1sg.erg 2sg-acc give-past yesterday-temp
 'I gave [it] to you yesterday.' [JIJBADN1p19s1]

(28) *Ngurnta-ja* *yinha* *pirlurn-ta-purra*
 lie-past this.nom afternoon-loc-temp
 'He lay down in the afternoon.' [JIJBAN12p50s7]

Another frequent use of *-purra* is with nouns and adjectives predicated of another noun to give a secondary predicate that provides the temporal setting for the situation being described (where English and other languages might use a temporal adverbial clause). Note that the secondary predicate nominal will bear a case marker (before *-purra*) in agreement with the nominal it is predicated of. Examples are the following:

(29) *Ngatha* *kumpa-artu* *juma-purra-thu* *ngurru-martu-wu*
 1sg.nom sit-usit child-temp-top old man-pauc-dat
pampura-nyjarri-yi *marringka-rnu* *papa-rla*
 blind-pl-dat lead-imperfSS water-allat
 'As a child I used to lead the old blind men to water.' [JIJBAN9p7s4]

(30) *Jalikurti-yarra* *nagli-ju* *kumpa-artu* *juma-kutharra-purra*
 friend-kindl.nom 1dl-excl.nom sit-usit child-dl.nom-temp
 'We two were friends when we were children.' [JIJBAN12p25s2]

(31) *Nhanya-nyja* *ngatha* *murtu-purra*
 see-past 1sg.erg baby.acc-temp
 'I saw [him] when [he] was a baby.' [JIJBAN12p24s8]

The *-purra* suffix can follow the privative ‘lacking’ suffix in Jiwarli to mean ‘before ...’ (literally ‘when there were no ...’), as in:

- (32) *Kuwarti yinha muntu juru-yirra-la-purra*
 today this morning sun-priv-loc-temp
 ‘This morning before the sun (rose).’ [JIJBAN12p50s9]

We also find expressions like *walypalayirralapurra* ‘before the white people (came)’ (literally ‘white person-lacking-locative-temp’).

4.2 Diyari

The Diyari language and its neighbours, spoken in the far north-east of South Australia (see map), are unusual in having a single conjugation within which all verbs inflect (Austin 1981, Dixon 1980:430ff). They are also unusual in that they have sets of post-verbal auxiliaries that code tense and aspect; these auxiliaries are homophonous with main verb roots and have apparently developed relatively recently through grammaticisation.

Like Jiwarli, Diyari makes a major distinction between main verb and dependent verb inflections (Austin 1981:82ff), with the latter category expressing relative tense and switch-reference (the same three relative tense categories, with the same associated aspect meanings, are found). Main verbs have four inflectional categories: the moods ‘imperative’ and ‘optative’ (somewhat similar in function to the Jiwarli ‘irrealis’), and the two ‘tenses’, *-yi* labelled ‘PRESent’, and *-ya* labelled ‘PAST’ in Austin (1981:82ff). In fact, the *-yi* affix “has the basic function of indicating some situation which is aspectually imprefective, that is not completed ... and non-past tense. Most commonly *-yi* marks some non-completed action or event which occurs at the present time of speaking” (Austin 1981:83–83), however it is also used for the future and for generic statements. In addition, it has a discourse function of marking “verbs which occur in sequential progression within the general context, typically past, of the text as a whole” (Austin 1981:84). In contrast, *-ya* “marks both past tense and perfective aspect. That is, it indicates that an action or event took place at some unspecified time in the past and is seen as a completed whole at the time of speaking” (Austin 1981:85). The primary dimension for main verbs then seems to be aspect rather than tense, and temporal coding is a contextual function of this aspect contrast.

The auxiliary verbs of Diyari however do clearly code tense distinctions. The following table sets out the auxiliaries and their functions, together with the meanings of the lexical roots with which they are homophonous. Each auxiliary selects one of the PRESent or PAST inflections. Note that there is a single future tense auxiliary, but finer distinctions are made in the past tense. Interestingly, these distinctions are **not** lexicalised in time location words.

Auxiliary	Homophonous root	Auxiliary function
<i>wanthi-</i>	'to search'	distant past
<i>wapa-</i>	'to go'	habitual; intermediate past
<i>parrha-</i>	'to lie'	recent past
<i>wirrho-</i>	'to enter'	yesterday past
<i>warra-</i>	'to throw'	immediate past
<i>ngana-</i>	'to be'	future

The semantics of each auxiliary is as follows (for further discussion and examples see Austin 1981: 88-91):

1. *wanthi-* 'distant past' signals a situation that held in the distant past, typically of the order of several years ago or more, as in the following first line of a mythological text:

- (33) *Thari ya mankarra pula nganarna wanthi-yi nhuwamara*
 youth and girl 3dl.nom be aux-pres married couple
 'A young man and a girl were married long ago.'

Notice that unlike the Jiwarli distant past category there is no coding of habitual aspect with *wanthi-*.

2. *wapa-* has two separate functions. When it take the *-ya* PAST suffix it codes "past time of the order of one or two months prior to the present" (Austin 1981:89), as in:

- (34) *Pula nandrramalirna wapa-ya*
 3dl.nom fight one another aux-past
 'They fought one another a good while ago.'

With the PRESENT inflection *-yi*, *wapa-* specifies habitual mood, not tense, as in:

- (35) *Thana ngamarna wapa-yi mitha muya-nhi*
 3pl.nom live aux-pres country dry-loc
 'They live in the dry country.'

3. *parrha-* takes the *-ya* inflection and "indicates past time of the order of one or two weeks prior to the present" (Austin 1981:90), as in:

- (36) *Nhawu wata waparna parrha-ya*
 3sg.nom not go aux-past
 'He didn't go (last week).'

4. *wirrihi-* takes *-yi* PRESENT inflection and “indicates that an action or event occurred ‘yesterday’, that is, at some time between this morning and yesterday morning” (Austin 1981:90), as in:

- (37) *Thangkuthangkuparna* *windrriha* *diji* *durnka-rnanthu*
 morning only sun.nom rise-implDS
- nganhi* *waparna* *kurrhalha* *wirrihi-yi*
 1sg.nom go go away aux-pres
- ‘I went away as the sun was only just coming up this morning.’

5. *warra-* takes *-yi* and “indicates immediate past, i.e. some time [during the day] between now and this morning”

- (38) *Maja* *ngathu* *nhinha* *nhayirna* *warra-yi*
 just 1sg.erg 3sg.acc see aux-pres
- ‘I have just seen him.’

6. *ngana-* occurs with *-yi* and “indicates near or distant future time reference” (Austin 1981: 91) (immediate future falls under the present tense, as in Jiwarli). An example is:

- (39) *Minhangankalha* *ngana-yi* *ngaldrra*
 do what aux-pres 1dlincl.nom
- ‘What shall we do?’

The presence of tense marking auxiliary verbs is a special feature of Diyari and its immediate genetic relatives, and seems to have developed in them relatively recently (Austin 1981:91). Thus, Ngamini has three auxiliaries: *ngana-* for future tense, *warra-* for recent past, and *wapa-* for distant past and habitual, while Yarluyandi has just two auxiliaries: *ngana-* for future tense and *wapa-* for distant past and habitual. One dialect of Yandrruwandha has a future auxiliary *ngana*, lacking in the other dialects. This suggests that the first auxiliary to emerge historically is future, followed by distant past (and habitual), and then further subdivisions of the past developing later. Interestingly, Yandrruwandha has a system of coding relative past tense reference, however this is done through **verb inflections**: *-lapurra* distant past; *-nga* weeks or months ago; *-nhukarra* within the last few days; *-nhana* within the last couple of days; *-na* very recent past (Breen 1976, see also Comrie 1985:98). Breen (1976: 755–756) also notes inconsistent use by his informants of the forms for coding temporal distance, except between *-nhana* and *-nhukarra*.

5. Verbal Tense and Other Inflectional Categories in Australia

We have seen that various Australian languages have verbal inflections marking tense and mood categories. The languages typically also have nominal inflections of case that code argument relations to the predicate or semantic relations such as location or beneficiary. Dixon (1980: 381) makes the following general comment in his survey:

“[t]he major verbal inflections are, as would be expected, quite different in form and meaning from nominal cases. A notable exception is the verbal purposive, which occurs in very many languages and almost always has the form *-gu*, identical to the recurrent nominal purposive”.

Subsequent research has shown that this statement is quite inaccurate since there are major similarities and overlaps between the forms of verbal inflections and those of nominal inflections. Blake 1994 is an Australia-wide survey that describes some of these (see also Blake 1994: 182ff). In the data I have examined, the following correlations are frequently found:

1. between **ablative** case and **perfective** aspect
(often also with **relative past** tense³);
2. between **locative** case and **relative present** tense; and
3. between **allative** case and **relative future** tense.

Perhaps the most striking example of the overlap between case and tense/mood is to be found in Kala Lagaw Ya (western Torres Strait) in which there are five polysemous affixes as follows (from Blake 1994: 183, based on Kennedy 1984):

marker	nominal function	verbal function
<i>-n</i>	ergative, accusative	completive
<i>-pa</i>	dative/allative	incompletive
<i>-pu</i>	comitative	habitual
<i>-ngu</i>	ablative	yesterday past
<i>-nu</i>	locative	immediate past

A full analysis of the semantics behind this kind of correlation is beyond the scope of the current paper, but Australian languages provide a fertile ground for its investigation.

6. Conclusion

The study of temporal categorisation and coding in Australian Aboriginal languages is a field rich in potential for future research. In this paper, I have

identified and briefly described two areas of possible interest: the lexicalisation of this semantic domain (and especially its connection to the domain of spatial reference), and also the grammatical coding of time through verb inflections. It is to be hoped that the preliminary remarks made in this paper can be expanded by further cross-linguistic research, especially for the non-Pama-Nyungan languages of northern Australia.

Notes

- 1) I am grateful to Yasuhiko Nagano for inviting me to the workshop at which an earlier version of this paper was presented; thanks are also due to workshop participants for their helpful comments. Data on Jiwarli and Diyari comes from linguistic fieldwork supported by the Australian National University, La Trobe University, and the Australian Research Council. I owe a great debt to the late Ben Murray and the late Jack Butler for teaching me their languages.
- 2) Jiwarli (and Diyari) examples are presented in a practical orthography that follows usual Australianist practice. The information in square brackets following the free translation of the Jiwarli examples gives the source — N plus a number indicates elicited data from fieldnotes, while T indicates text data. Abbreviations used in the morpheme-by-morpheme glosses are: ablat – ablative; acc – accusative; allat – allative; aux – auxiliary; dat – dative; dl – dual; erg – ergative; excl – exclusive; fut – future; imper – imperative; imperfDS – imperfective-different subject; imperfSS – imperfective-same subject; inchoat – inchoative; incl – inclusive; intent – intensive; kindl – kinship dual; loc – locative; new – new information; nom – nominative; pauc – paucal; perfDS – perfective-different subject; perfSS – perfective-same subject; pl – plural; pres – present; purpDS – purposive-different subject; purpSS – purposive-same subject; recip – reciprocal; temp – temporal; top – topic; usit – usitative.
- 3) In Jiwarli, for example the perfective-different subject inflection consists (at least etymologically) of the past tense marker (*-nyja* or *-rninyja*) plus *-parnti* the ablative case suffix.

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