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*PACIFIC LINGUISTICS*

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**THE LANGUAGE GAME**  
PAPERS IN MEMORY OF DONALD C. LAYCOCK

**Ton Dutton, Malcolm Ross and Darrell Tryon**  
(eds)



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## HOT AND COLD OVER CLOCKWISE

DAVID NASH

### 1. INTRODUCTION

In March 1983, when I was living at Yuendumu, a centre for the Warlpiri people of Central Australia, I wrote a note to Don Laycock<sup>1</sup> upon reading his article on 'podism', a term he coined for Northern Hemisphere chauvinism.

Among the passages which I had noticed was:

Australian aboriginals have a preference for sunwise – Australian anticlockwise – motion, and a large number of tribesmen in Papua New Guinea dance equatorially, back and forth. There would seem to be an MA thesis in this. (Laycock 1982:3)

In response to my asking for him to elaborate on the Aboriginal preference for sunwise motion, Don replied that his observation "just comes from years of (desultory) discussion of the subject with anthropologists plus my own observation of dancing in ethnographic films. I would find it hard to document convincingly, but I think it is so".<sup>2</sup>

The setting for the above observation was Don's detection of a lingering Northern Hemisphere viewpoint in Australian dictionaries:<sup>3</sup>

Both the Macquarie Dictionary (MD) and Chambers Twentieth Century Dictionary (CTCD) give 'anticlockwise' as a second meaning of widdershins/ withershins. As the word is good Anglo-Saxon for 'against the direction (of

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<sup>1</sup>One expected Don Laycock and his thoughts (one could not encounter the former without the latter!) to cross one's path in unexpected ways. I recall him advocating the abbreviation 'LSAus' at the August 1977 meeting of the (now) ALS (Australian Linguistic Society) in Melbourne, partly on the ground that 'AUS' is on the sticker affixed to motor vehicles of Australian registration when in other jurisdictions. I chanced on one of his pieces in the British magazine *Games and Puzzles* ('Five Hundred', v.72, 1979:32-33, 44) when I found a copy at the Tennant Creek dump. I attended a talk he gave on pronoun system typology ('Abbreviated Pronoun Systems') at MIT in 1979 – skipping from one outrageous example to the next, sitting on the top of a desk, with his thongs in his bilum beside him. Another memorable talk was the one on the 'Languages of Utopia' on 18 May 1984 at the Australian Academy of the Humanities.

For discussion of the topic of this paper I am grateful to Harold Koch and David Wilkins. My work was partially supported by grant A58932251 from the Australian Research Council.

<sup>2</sup>Don added hopefully 'I bet Brough Smyth or someone like that has something to say about it'. I have looked through Brough Smyth's 1873 compilation and have not yet noticed any mention of clockwise or anticlockwise.

<sup>3</sup>Language engineering has tackled a Borealianism that Don did not mention, for which see the *Encyclopaedia Britannica* (1975, VII:4) entry for **Moon, compass directions on**.

the sun)', it is clear that the direction is clockwise in the Southern Hemisphere. It is even possible to object that our use of 'clockwise' is podist, since the only reason that clocks and watches go clockwise is that they follow the direction of the shadow on a Northern Hemisphere sundial. Southern Hemisphere watches should go 'anticlockwise' – and equatorial watches should go back and forth.

(Laycock 1982:2)

This article is my reflections on the 'clockwise' concept in Aboriginal Australia, inspired by the above. I relate 'clockwise' to handedness, and in turn find a dearth of Australian evidence linking handedness with cardinal directions or spirals.

## 2. CLOCKWISE

Don in his letter to me made a fruitful suggestion as to how I might learn Warlpiri expressions for 'clockwise': "try relating it to handedness. Buins say 'circle to the left' when they mean 'anticlockwise – i.e. with the left hand towards the centre of the circle – conversely, 'circle to the right' is 'clockwise'."

In response to my enquiries as to how to express in Warlpiri a particular direction of rotation, such as for a key or a door handle or a knob, Kurt<sup>4</sup> Japanangka Granites suggested the terms *jampupurdanji* and *jungarnipurdanji*, formed respectively on the terms *jampu* 'left hand, left', and *jungarni* 'right hand, right; correct'. These terms I confirmed subsequently, although I hasten to add that there is much about them (and *-purdanji* and its related suffixes) that I do not understand.<sup>5</sup>

Warlpiri here is using expressions familiar to us from English, as when we may give someone an instruction to turn a knob or tap, say, 'to the left' or 'to the right'. In practice, though, Warlpiri commonly expresses such directionality through reference to cardinal directions. For instance, one Warlpiri on the roof of a vehicle might call out to the driver that he should turn the fuel tap to the auxiliary fuel tank, by saying:

*Kakarrara-purda ma-nta! Kakarrara-purda!*  
 east-wards get-Imperative east-wards  
 Turn it to the east! To the east!

The salience of cardinal directions for speakers of Aboriginal languages is often remarked on. For the Warlpiri it is nicely illustrated in Paddy Patrick Janagala's vernacular definition (June 1987) of the Warlpiri noun and preverb *ngarlingarli* 'sideways, on the side':

*Ngarlingarli, ngulaji yangka kujaka ngunami jarda ngurljupurdanji, ramarrapurdanji, yangka kakarrarapurdaji miyalu kurlirrapurda, manu purturlu yatijarrapurda, manu wirliyajarra karlarrapurda, jurru kakarrarapurda. Yangka ngarlingarliji kujaka ngunami jarda miyalupurdanjiwangu, purturlupurdanjiwangu – ngarlingarliji.*

<sup>4</sup>Then Leonard, a name now avoided (*kumunjayi*).

<sup>5</sup>For instance, what are the differences in meaning, and the historical relationships, between the restricted *-purda* (on cardinals), and *-purdanji* (on body-part terms) and the corresponding general Allative *-kurra ~ -kirra*, and Perative *-wana ~ -wanawana* or Locative *-ngka ~ -rla* case suffixes? The term *jampupurdanji* occurs a number of times in the machine-readable Warlpiri text collection, but *jungarnipurdanji* does not, though it is a well-formed word. Swartz (1989) includes the term *jungapurdanji* 'right hand'.

*Ngarlingarli*, that is when someone lies on their side, on their ribs, to the east, the stomach to the south, and the back to the north, and the two feet to the west. It is *ngarlingarli* when someone lies neither on their stomach nor on their back – but *ngarlingarli*.

Certain spatial terminology varies between relative and absolute from language to language. Thus when we English speakers would typically use an observer-dependent expression like 'to the left', Warlpiri speakers would typically use a more observer-independent expression like 'to the east'.<sup>6</sup> What I had learnt, with Don Laycock's prompting, is that Warlpiri also has available the observer-dependent expression *jampupurdanji*.

But more can be observed. The Warlpiri expressions like 'to the N/E/S/W' are situation dependent in a way that expressions like 'to the left/right' are not, as the example with the fuel tap shows. The Warlpiri cardinal-based translation of English 'Turn it to the left/anticlockwise' will vary with the compass, depending on the heading of the referent (the vehicle). Through the (relatively recent) rise of the term 'clockwise' (and 'anti-' and 'counterclockwise'), English has a means of expression which is independent of the orientation of both observer and referent.<sup>7</sup>

Given the Aboriginal preference for cardinal directions, I was not surprised when a search I made of dozens of Australian language vocabularies failed to turn up any terms glossed as 'clockwise', or any lexicalisation of rotational directionality. In addition, Kendon (1988: 116-118) concludes from his broad study of Australian manual languages that generally 'handedness is not usually relied upon as a form of linguistic contrast'. My tentative conclusion is that while "There would seem to be an MA thesis in this" (as Don said) we lack the evidence to say that "Australian aboriginals have a preference for sunwise – Australian anticlockwise – motion".

### 3. CARDINAL DIRECTIONS

We know examples of how observer-centred terms such as 'left' and 'right' can take on observer-independent senses. Winter (1985:583) observes:

Typically, a convention was established that a point of reference should remain stable. Thus, the left-hand side of a boat was always determined in relation to its bow... 'Left' and 'right' in a house of parliament have been fixed as seen from the Chair.

Apparently such a shift is seen in some etymologies:

Podism is even embedded into Northern Hemisphere languages. In Semitic languages, and in Welsh, the word for 'right' is often related to the word for 'south' – because, in their homelands, when one faces the rising sun in the east the sun at noon will be on one's right hand. (Laycock.1982:3)

<sup>6</sup>I am indebted to Patrick McConvell for some discussion of this point.

<sup>7</sup>And, pace Laycock (1982), of the hemisphere in which the term is used!

The majority of [Indo-European] words for the main points of the compass are based either on the position of the sun at a given time of day...or on one's orientation, which among the IE-speaking peoples was usually facing the sunrise ('in front'='east'...) (Buck 1949:870-873)

[There is] the correlation that Indic tradition establishes between 'right' and 'left' and cardinal points. First among the directions of the compass was the point of sunrise, the east; the natural direction to follow from there was the course of the sun. Facing east, absolute 'south' and person-related 'right' referred to the same reality; the same applied, as long as the basic orientation was retained, to 'north' and 'left'. To go from right to left in a natural way was to move clockwise; even in our western tradition, the same pattern is observed to this day – to move withershins, that is, counterclockwise, is considered unlucky by some. (Winter 1985:588)

The question arises then for, say, Australian Aboriginal languages: are there any markedness relations among cardinal terms? In particular, can cardinal direction terms be related to terms for 'left' and 'right' and, if so, what is the cultural basis for the relationship?

The best discussion published so far is probably that of Tindale (1974:45-48), who noticed polysemy relating:

'south'	:	'cold'
'east'	:	'dawn', 'sunlight'
'east'	:	'moon', 'sun'

The suggestion is that the cardinal terms are derived from the terms in the right column, as "It seems evident that terms can become independent of sun orientation". One can propose that meanings tend not to change in the reverse direction, so that a term for 'sun' or 'moon' for instance is unlikely to be derived from a term for 'east' (or any other cardinal).

There are of course conceptual associations, south of the Tropic of Capricorn at least, of 'sun side' with 'north', and 'shade side' with 'south' (said of Uluru, for instance: Harney 1970:7). In addition to the etymologies above noted by Tindale, there may be others evidencing the conceptual alignment:

north	:	south
sun	:	shade
hot	:	cold
up	:	down <sup>8</sup>

We can add, from the Warlpiri, an association of 'north' and 'south' with the two sociocentric patrimoiety terms (Laughren 1982:76). Von Brandenstein (1982) is a compilation of much relevant information which would help an investigation into whether these associations play an etymological role in cardinal direction terminology.

(1) Tindale documented what are presumably several historical shifts of a quarter-circle (right-angle) of the compass direction terms in various parts of Australia. He shows that some of the shifts are clockwise ('east' becoming 'south') as in Jawuru (Yawuru), and some

<sup>8</sup>Note that the common English association of 'up' with 'north' (and 'down' with 'south') is, in this account, unmarked for an Australian but not for a Borealian. As Tindale (1974:49) warns, there are other Australian associations of 'up': 'down', including 'coastal': 'inland'.

are anticlockwise as in Njamal (Nyamal). To this can be added the clockwise rotation of terms found in Lower Arrernte and Antekerrepenh (J.G. Breen, pers. comm.).

(2) The Mudburra (central NT) cardinal stems:<sup>9</sup>

<i>kirrawarra</i>	north
<i>karrawarra</i>	east
<i>karlarra</i>	west
<i>kurlarra</i>	south

have the same initial consonant and final syllable, and occur as two pairs differing only in the first vowel.<sup>10</sup> There is a correlation with the common phonaesthetic vowel grading *i - a - u*, in that only one of the four terms has *a /i/*, viz. 'north', and only one has *a /u/*, viz. 'south'. This pleasing pattern suggests that 'north' is proximate in opposition to distal 'south'. Whether or not one would expect this phonaesthetic dimension to be found in other Mudburra stems in the same domain, it appears not to:

<i>kankarra</i>	upstream
<i>kanimparra</i>	downstream
<i>kankulu</i>	up, on top
<i>kanyju</i>	under

When comparing vocabularies of the central Northern Territory, it is noticeable that the term for 'north' shows more variation from language to language than the other three cardinals. Within Warlpiri, on the other hand, it is the term for 'south' which alone shows dialectal variation *kurlarra* ~ *kurlirra*, and which has an irregular derived form, *kurlarninyarra* 'across the south' – see Laughren (1978).

(3) Wilkins (1989) reports on word-association tests, in which six Arrernte speakers tended to have a bias for clockwise associations, viz. East given for North, South given for East, West given for South, and North given for West (in the course of a 120-item word association test administered in Arrernte).

(4) The reverse tendency was noted by Wilkins (1986). The arrangement of cards for telling stories, in a text elicitation experiment Wilkins conducted, showed a strong anticlockwise bias, for which he posits several explanations.

(5) An Aboriginal association of cardinal directions with unknown linguistic implications is in burial orientations in the Murray River area (Pardoe 1989:14-18 and references cited there). "It appears that normative orientations of burials were [head] to the southwest and secondarily to east-northeast."

#### 4. SPIRAL

There is another concept which has potential 'handedness' or rotational directionality, namely that of 'spiral'. We can distinguish a left-hand and right-hand spiral, just as there are right-hand and left-hand screw threads. I shall use 'clockwise' of a right-hand spiral, that is, one which is the locus of point moving clockwise with increasing radius; conversely, 'anticlockwise' for a left-hand spiral.

<sup>9</sup>The terms are taken from notes made by Patrick McConvell. See Nash (1984).

<sup>10</sup>Terms similar to the second pair, 'west' and 'south', but not the first pair, occur in Warlmanpa and Warlpiri, to the south of Mudbura.



The spiral occurs in some Aboriginal art.<sup>11</sup> Davidson (1937:106-107) notes that "it seems true that the aborigines do not distinguish between concentric circles and spirals", a generalisation not overturned since he wrote.<sup>12</sup> Munn (1986 [1973]:138) found of Warlpiri sacred designs that "Men treat the two forms – the concentric circles and the spiral – as equivalent, and freely alternate them in usage." The numerous spirals reproduced in Munn (1973) are clockwise and there are only two or three anticlockwise spirals among the many spirals in Munn's collection of men's pencil drawings (N. Munn, pers. comm.). Holmes (1972:8-9) reproduces a bark painting containing a clockwise spiral and two anticlockwise spirals. Mountford (1976: Colour Plate 12) incorporates three anticlockwise spirals, and Plate 9 shows a man drawing a clockwise spiral in the sand.

Spirals of both orientation occur, but I have not found a discussion of spiral handedness in what commentary I have read on Aboriginal visual art. The goal of balance and symmetry would counterpose a design or motion of one handedness with that of the other.<sup>13</sup> My conclusion on the basis of the slim evidence is that it is futile to impute any pan-Aboriginal preference for one particular rotational direction (anticlockwise or clockwise).

Curiously, the English term 'spiral' applies not only to a two-dimensional, planar, spiral, but also to a three-dimensional screw shape or 'helix' (as in a 'spiral staircase', 'spiral dive'). The planar spiral and the helix are different geometrically, but have in common the property that the shape is 'circular', but when traced mentally it doesn't link up with itself. A similar concept is 'coil'. A Warlpiri man made an explicit mapping between a helix and concentric circles in a diagram reproduced in Munn (1973:203, Fig.6b); the diagram can equally well link a helix and a spiral.

Warlpiri has a noun *wilirdi* 'spiral; whirlwind, willy-willy'. Compare the noun *waru* 'curved, concentric circles', a term which I suspect includes planar spirals.

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<sup>11</sup>I am grateful to Luke Taylor for guidance to a number of these references, and exonerate him from any responsibility for the suggestions I make based on them.

<sup>12</sup>Davidson was most interested in whether spirals could be shown to be an older motif than concentric circles, and cites Spencer and Gillen (1899:633) on the same point. Walsh (1988:68,152,160) mentions three examples of a spiral, in all of which the spiral is a rarer variant of concentric circles. I have seen spiral in rock engravings in other locations north and north-east of Alice Springs. I would hazard that there is a correlation, that the more ephemeral drawings (sand drawing, on paper) have a higher ratio of spirals to concentric circles than the less ephemeral (e.g. rock art); a spiral is a quicker way of achieving the look of concentric circles. (This applies to the more abstract drawings; where the spiral is a clear picture of a coiled snake, for instance, the option of concentric circles is not available.)

<sup>13</sup>John von Sturmer pointed out a compound instance of this out to some of us watching a men's ceremonial performance during the Warumungu land claim hearing, 1985.

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