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THE INDIGENOUS WEATHER KNOWLEDGE PROJECT: TOWARD A PHEN(OMEN)OLOGY OF THE AUSTRALIAN SEASONS

INTRODUCTION: REVISIONING THE AUSTRALIAN SEASONS

In a recent article in the *Australian Geographic*, Tim Entwistle, Director of Conservation at Kew Gardens, proposes a five-season model for Australia. Entwistle's schema includes a weightier four-month summer (December–March), a slenderer two-month autumn (April–May), and a compressed two-month winter (June–July). Revisioning and reassigning the antipodean seasons, he divides spring into a two-month “sprinter” (August–September) and two-month “sprummer” (October–November). Entwistle's five-season thinking unmistakably emphasizes the Australian summer, comprising one-third of the solar year in his schema. Additionally, spring (as the moniker “sprinter”) begins in August—one month earlier than its four-season counterpart—to correspond to the flowering of native plants in many parts of Australia. Why should Entwistle go through the trouble? What's wrong with the four season score—the venerable subject of much European and North American cultural reverie—in Australia? Indeed Entwistle regards seasons as “cultural constructs reminding us that there are cyclic changes in the environment” (quoted in Duncan 2011, April 1). Yet, judging from his revisionist proposal, the usual constructs—spring, summer, autumn, winter—are unsatisfactory “down under”; the Australian seasons are in need of reconsideration, hopefully leading to new modes of seasonal awareness.

On the surface, Entwistle's seasons more sensibly accommodate the natural cycles of the Australian landscape. His ecologically inspired calendar, in part, adjusts its demarcations to the chief flowering time of Australian native flora on the whole. However, while I recognize that Entwistle's five-season tender is praiseworthy, any template for generalizing the Australian seasons inevitably becomes ensnared in the mode of cultural construction that it seeks to overcome. In its reconfiguring and compartmentalizing of the seasons, Entwistle's model reproduces the ineluctable weaknesses of a single seasonal paradigm for a land mass as vast and diverse as Australia. The cultural construction of the seasons—exemplified by the Gregorian or Christian calendar used by nearly all Western countries (Aveni 1990, 116-117)—implies a singular and monologic rendering of seasonality, largely dislocated from the nuances of regions. Even Entwistle's more considered kind, nevertheless, risks imposing a managerialist grid on the plural landscapes—bioregions, places, locales—that comprise Australia as a highly diverse biocultural whole. For instance, in the five-season scheme, spring as a temporal denomination is entwined with the flowering of native plants. Although botanically sensitive, this prioritization backgrounds the other physiological events in the annual cycles of flora—as well as the cultural, sensorial, spiritual, ethnozoological, astronomical, and climatic considerations that collectively signify endemic seasons (Clarke 2009). In other words, flowering times reflect only one aspect of a land-based calendar as an environmentally and culturally integrated unit.

Robust traditions of endemic seasonality—along with the cultural integrity underlying them—should not be overshadowed by national standards, revisionist or

otherwise. Like the Gregorian calendar, seasonal calendars or “indigenous ecological calendars” are cultural constructs—“timetables that divide the year into seasons and describe expected conditions and resource availability” (Prober, O'Connor, and Walsh 2011, 2). Yet, as I will go on to show, a seasonal calendars, unlike the Western calendar, is firmly linked to the ecology of a place (Usher 2000). As alternatives to the four-season regime, “indigenous calendars,” Entwistle concedes, more appropriately reflect regional Australian climates than the globalized four-season paradigm gestated in the northern hemisphere. I suggest that Australian indigenous calendars offer the vital complement to Entwistle’s call for five seasons; each Aboriginal culture has a unique place-based system of season-keeping (Clarke 2007, 54-59). The risk in Entwistle’s proposal is that the the five-season model will simply substitute in for the four-season scheme; the complex nuances of each indigenous calendar rendered one-dimensional by the imposition of a “fixed system of reference” over the whole of the country (Prober, O'Connor, and Walsh 2011, 2).

Whether four or five in number, an Australian seasonal paradigm needs to be thoughtfully counterbalanced by local knowledge of the seasons, encapsulated in indigenous ecological calendars. While I find Entwistle’s proposal an incomplete formulation of the Australian seasons in their actual plurality, the model’s opening to land-based calendars offers a promising way forward and a basis for dialogic understanding of the seasons. In short, broadly based models of seasonality—including Entwistle’s—can be enhanced through sustained reference to the tacit embodied knowledge of indigenous calendars. Hence, in response to Entwistle, I call for a dialogic perspective on the seasons that considers multiple places, scales, temporalities, ecologies, bodies, and cultural traditions in Australia. As a counter-example to Entwistle’s five-season proposal, the Indigenous Weather Knowledge Project (IWKP) offers a means for counterbalancing any single fixed system. The project aims to consolidate the seasonal knowledge of Aboriginal cultures in consultation with their elders (Australian Bureau of Meteorology 2010). One of the practical outcomes of the IWKP is the digital documentation of indigenous calendars on the project’s website for open public access.

The intention of this article is to trace the backstory to Entwistle’s call to reformulate the Australian seasons. In sketching the backstory, I begin with the origin of the Gregorian construct, alluding to its importation to Australia as part of the processes of colonization since the 18th century. Here, I suggest that the singular model of the four seasons displaced (and potentially still displaces where traditional knowledge networks are threatened) the multiple modes of season-reckoning in Australia. I then go on to consider the twin notions of endemic seasonality and indigenous calendars through historical reflection on the six-season Nyoongar calendar (Bates 1985, Moore 1884/1978, Ryan 2012, Bindon and Walley 1992). The Nyoongar are the Aboriginal people of the South-West corner of Western Australia (Green 1984, Van den Berg 2002, South West Aboriginal Land & Sea Council 2009). After the case study of the Nyoongar calendar and its embodied aspects, I proceed to a brief analysis of the Indigenous Weather Knowledge Project (IWKP).

Throughout my longitudinal discussion of the Australian seasons—from long-standing Indigenous traditions, to the Gregorian importation, and to contemporary modes of Australian season-telling, represented by the IWKP—I propose and develop the concept of a phen(omen)ology of the seasons. I argue that the IWKP is best conceived of as an online *phenological* template that gives actual *phenomenological* exploration of the seasons a reference point for contemporary Australians interested in getting to know the endemic seasonalities of their places. Simply put, both a phenology and a phenomenology are

essential to beginning to grasp the meaning of endemic seasonality in Australia and to learning to live with the seasons more consciously and concertedly.

THE SEASONS OF THINGS: A PHENOMENOLOGY OF DWELLING WITH/IN

Before going further into the backstory to Entwistle's call for five Australian seasons, I will further set out my philosophical position on the seasons through the concept of a phen(omen)ology. I ask: How should we rethink the four Australian seasons in a manner that is sensitive to Australian places and cultures? How can individuals learn about the seasonal specificities of where they live in connection to national models of seasonality, whether four or five? And, how can settler culture in Australia—steeped in four-season perception—begin to appreciate and hopefully “dwell” with and in the endemic seasonalities described by Aboriginal peoples? As suggested in the previous section, the incorporation of land-based seasonal knowledge into Australian culture through indigenous calendars is optimally approached *phenomenologically* and *phenologically*. The former occurs as an individual's experience of the seasons through sight, hearing, touch, taste, and olfaction: as physical sensations registered in the body sensorium. The latter refers to cognitive awareness of the progression of events in time linked to plants, animals, the wind, constellations, and other biotic and abiotic phenomena. As I will go on to discuss in detail, the IWKP can be read as a phenology of Aboriginal seasons; the project foregrounds ecological waymarks connected to seasonal transitions and cyclical processes. For example, in the Yawaru calendar situated north of Broome, Western Australia, the ripening of the cocky apple and the availability of wild yams signal Mankala or the Wet Season (Australian Bureau of Meteorology 2010). The IWKP knowledge engenders phenomenological exploration of the seasons; however, it should not be regarded as a substitute for embodied encounter with the seasons, but rather as an aid to such encounters.

In contrast to a phenology, a phenomenology centralizes immediate physical knowledge of the endemic seasons of a place: seeing, tasting, feeling, touching, and smelling the seasons, in their tangible manifestations, as they unfold. In setting out a phenomenology of the seasons, I will analyze in some detail Martin Heidegger's notions of dwelling (1971, 143-159) and “the thing” (1971, 163-180) with respect to Maurice Merleau-Ponty's phenomenology (2005). I will also extend recent theoretical developments in phenomenological geography (Bender 2002, Tilley 1994, 2010) and phenomenological approaches to literary and cultural studies as “embodied temporality” (Ryan 2012). Here, it is crucial to recognize that indigenous ecological calendars, such as those of the Nyoongar and Yawaru, are lived calendars. The sensory cues of ecological calendars are intrinsically connected to intimate seasonal knowledge. When navigated phenomenologically in the environment, these cues—e.g., the ripening of the cocky apple and its sensory materializations through its pungent smell, sweet taste, and pleasing image—signal the changing of the seasons accompanied by bodily resonances. Thus, for Australian settler society, a return to endemic seasonality calls for corporeal participation in places of dwelling. This phenomenological call is heightened by the fact that ecological indicators of seasonal onset and transition vary annually according to manifold factors, such as rainfall, made even more irregular by the seasonal disruption associated with climate change (Steffen et al. 2009, 68, CSIRO 2011). To state the situation differently, in order to understand endemic calendars, one must recognize their indications physically; a

phenomenology of the seasons is therefore bodily, multi-sensory, and integrative of nature and culture.

A phenomenology of the seasons attends to the “things” of nature (animals, plants, rain, wind) which, in their sensuous being, announce the seasons and their passage. My phenomenological approach to the Australian seasons begins with Heidegger’s dwelling as a key term, developed in his essay “Building Dwelling Thinking” (1971, 143-159). Through human dwelling in a place, the presencing of the seasons comes forth and is registered sensorially. For Heidegger, dwelling is the essential quality of being. In examining the notion of dwelling in relation to Heidegger’s articulation of “the thing” (1971, 163-180), I build the foundation for a philosophy of the seasons that situates the vital things of nature—in their particular modes of being—before the fixed logos of the Gregorian model. Heidegger argues that to dwell means “to remain, to stay in a place” (1971, 144). “To dwell” implies the verb “to be” and “the way in which you are and I am, the manner in which we humans *are* on the earth [italics in original]” (1971, 145). To this effect, Heidegger links etymologically the Old English and High German word *bauen*—for building—to “dwelling” and, more compellingly, to “be” such that “I am” intrinsically signifies “I dwell.” More apposite to the vitality of seasonal being in place, *bauen* connotes “to cherish and protect, to preserve and care for, specifically to till the soil, to cultivate the vine” (1971, 145).

As unified being, dwelling consists of the fourfold oneness of earth, sky, divinities, and mortals; each implies the other so that, for example, thinking of earth entails thinking of sky and divinities. For Heidegger, earth refers to “blossoming and fruiting,” whereas sky connotes “the course of the changing moon...the year’s seasons and their changes...the clemency and inclemency of the weather” (1971, 147). To dwell phenomenologically in the seasons is to leave “to the seasons their blessing and their inclemency” (1971, 148)—to apprehend the seasons without exerting predetermination, control, or constraint; to allow the seasons to “presence,” in their originary places, to the human sensorium in the act of season-telling. Moreover, dwelling is “always a staying with things” (1971, 149). Heidegger points to a the urgency of dwelling in then-modern times in which humanity “*must ever learn to dwell* [italics in original]” (1971, 159). In developing the concept of a “phenomenology of landscape,” Tilley observes that, for Heidegger, “spaces open up by virtue of the *dwelling* of humanity or the *staying with things* that cannot be separated: the earth, the sky and the constellations, the divinities, birth and death [italics in original]” (1994, 13). Additionally, Tilley identifies the “total social fact of dwelling, serving to link place, praxis, cosmology and nurture” (1994, 13). The primacy of Heideggerian dwelling, in Tilley’s analysis, implies the human body as the plenum of apprehension within the landscape and, by extension, within the seasons. Dwelling with and in the seasons is a habitus of being that reflects the unity of ontology, cosmology, plants, animals, insects, and human consciousness.

What does Heidegger mean by “things”—a word which in common parlance tends to invoke the inanimate stuff or objects of the world rather than the living beings calling forth the seasons in their sensuous natures. In the essay “The Thing,” Heidegger differentiates between objects and things. An object is “that which stands before, over against, opposite us” (1971, 166) as the objectified “standing reserve” of technological enframing or *Ge-stell* (Heidegger 1977). In comparison to the instrumentally derived value of objects, a thing “stands forth” (1971, 166) agentically in its own right, manifesting the fourfold oneness of earth, sky, divinities, and mortals. “Thing” refers to the presencing of an essential nature of living and non-living entities (1971, 172). As the gathering of oneness, “thing” entails the

process of bringing forth Heidegger's notion of fourfold unity: "The thing stays—gathers and unites—the fourfold" (1971, 178). While they can be dead matter, things can also be animate, in Heidegger's view as "things, each thinging from time to time in its own way" (1971, 180). Hence, for settler society, to rethink the Australian seasons is to dwell with the things through the seasons in the places that circumscribe each: the cocky apples and the wild yams in Yawaru country or the banksia and red gums in Nyoongar country. The "thinging" of seasonal things is their presencing through their sensory manifestations—their ripening, their effusions, their stridulations—at particular times of the year. The human body, thus, acts as a sensing agent of the seasons in conjunction with knowledge of phenological details, such as those offered by the IWKP, including flowering, fruiting, nesting, and molting times, for example.

The concept of the human body as the plenum of apprehension, while weak in Heidegger's account of the presencing of things, is more clearly developed in Merleau-Ponty's work and, in particular, *Phenomenology of Perception*. In comparable terms to Heidegger, Merleau-Ponty comments that "sense experience is that vital communication with the world which makes it present as a familiar setting of our life" (Merleau-Ponty 2005, 61).

Recent work in phenomenological geography and cultural studies provides another conceptual foundation for a phenomenology of the seasons. Barbara Bender outlines a phenomenological perspective on geographical research "where the time duration is measured in terms of human embodied experience of place and movement, of memory and expectation" (2002, 103). Bender implies that, in lieu of fixed points of reference for season-keeping, the human body acts as an ever-open sensorium, marking the seasons somatically through their fugue-like progression over time. Cultural theorist John Ryan terms this embodied temporality—the "sense for time and seasons engendered through physical, multisensorial interactions with place" (2012, "(De)colonising the Australian Seasons," para. 5). He refers to ethnobotanist Philip Clarke's work on "calendar plants" to describe seasonal things that simultaneously provide a time-keeping measure and a source of physical sustenance. Similarly, Christopher Tilley argues that human embodiment—entailing multi-sensory openness to the things of the seasons—is essential to a phenomenology of place: "A phenomenologist's experience of landscape is one that takes place through the medium of his or her sensing and sensed carnal body" (Tilley 2010, 25), a characteristically Merleau-Pontian position. Hence, extending Tilley's position, a phenomenological approach to the seasons implies a "dialogic relationship between person and landscape" which stresses the materiality of landscapes as "real and physical rather than simply cognised or imagined" (2010, 26). In Heideggerian terms, the materiality of earth is the "blossoming and fruiting"—the ecological processes through which the presencing of things transpires. Moreover, for Tilley, a number of attributes and dispositions define phenomenological being in landscape, including "perception (seeing, hearing, touching), bodily actions and movements, and intentionality, emotion and awareness residing in systems of belief and decision-making, remembrance and evaluation" (Tilley 1994, 12).

THE SEASONS OF OUR INHERITANCE: ORIGINS OF THE GREGORIAN MODEL

In this section, I briefly outline the emergence of the twelve-month (four-season) Gregorian calendar (also known as the Christian or Western calendar) from the Julian schema of the ancient Romans. In 1582, the Gregorian calendar, or the "new style" (*N.S.*), replaced the

calendar of Julius Caesar, known as the Julian calendar or “old style” (*O.S.*). The late 16th century erasure of an “extra” ten days, produced by the Julian system of time-reckoning, allowed for the correction of calendrical “shifts since Caesar’s time” (Feeney 2007, 150). In the Gregorian scheme, the four seasons, each approximately 3 months long, are structured according to two equinoxes and two solstices per annum. Anthony Aveni (1990) discerns between structural and ecological time as a means for exploring the often colonizing intersection of Western and indigenous traditions of season-reckoning. For Aveni, the Gregorian calendar epitomizes Western structural time, whereas indigenous calendars tend to reflect ecological time. Following Aveni, I will argue that the Gregorian calendar—which is the underlying structure for the four Western seasons—constitutes a grid-like temporal imposition on the seasonally diverse places across Australia. The current use of the Gregorian calendar and associated four seasons in Australia derives from the British system adopted in 1752. The subsequent institutionalization of the calendar in the British colonies occurred despite the misalignment between the climates of Australian regions and the twelve-month, four-season regime.

Here, I call into question the meaning and function of a calendar. Agnes Michels (1967, 9) defines a calendar as “a device for measuring time, by which [people] can plan for the future and keep a record of the past.” Aveni (1990, 6) argues that the underlying premise of a land-based calendrical system is that a “temporal order” in the natural world already exists. A calendar merely identifies, exposes, and codifies this temporal order. By establishing a template for capturing and controlling the order, an institutionalized calendar avoids the problem of variation in seasonal durations in different places within a country. Such a problem, according to structural thinking, is posed by the subjective sensory reckoning of seasons evident in many indigenous calendar systems (Aveni 1990, 6). In differentiating between structural time and ecological time, Aveni (1990, 123) emphasizes how the seasons overlap in reality; that their edges are not firm and concise. This overlapping denotes “a sense of instability to the event sequences that make up the cycle of nature’s behavior.” Such instability in nature, however, for Michels (1967, 9-10), renders the seasons an unsound basis of “only relative value” for a calendar: “although the seasons proceed in a regular sequence from year to year, they may vary considerably in length owing to variations in the weather.” Moreover, to compound the difficulty of seasonal standardization and the need for a uniform system, the “seasons also vary locally” (Michels 1967, 9-10), which is certainly the land-based reality in Australia.

Four-season thinking is evident in the writings of the English Saint Bede (also known as the Venerable Bede, ca. AD 672–735). He connects the four seasons to the temperate conditions of the northern hemisphere and also to the four humors of the human body. For Bede, the seasons firstly derive from the English climate as the rightful markers of the temporal order:

The seasons [*tempora*] take their name from this temperateness; or else they are rightly called *tempora* because they turn one into the other, being tempered one to another by some qualitative likeness. For winter is cold and wet, inasmuch as the Sun is quite far off; spring, when [the Sun] comes back above the Earth, is wet and warm; summer, when it waxes very hot, is warm and dry; autumn, when it falls to the lower regions, dry and cold. (Bede 1999, 100)

Bede (1999, 100–1) then characterizes the human body a “microcosm” and “a smaller universe” (1001) in which the four humors—blood, black bile, red bile, phlegmatic humors—correspond to the four seasons. Hence, certain humors manifest during certain seasons. Moreover, the four qualities of hot, cold, wet, and dry—which couple to produce the conditions of the seasons—constitute the human humors as well. Bede’s associates of the qualities and humors with the seasons. While an embodied seasonal philosophy, this reflects the quarterly division of the year implied in the ancient Roman term *tempora annu* or “times of year” (Leofranc 2005, 80).

In B.C.E. 46, Julius Caesar replaced the ten-month Roman lunar calendar with a twelve-month system (Fredregill 1970, 13). Caesar’s schema, which became known as the Julian calendar, averaged 365.25 days per year (Fredregill 1970, 14). As the ancient precedent for the modern calendar, it comprised the twelve Gregorian months, although they were denoted by somewhat different names (e.g., *Sextilis* rather than August). The main fault of the Julian calendar—addressed by the Gregorian reform—was calendrical drift: the tropical year measured approximately 365.24219 mean solar days (Richards 1999, 239). Calculating the discrepancy between Gregorian and Julian calendars at 11 minutes and 14 seconds, Fredregill (1970, 14) terms the Julian calendar “slow.” In calculating slightly more days in the calendar year than the tropical year, the Julian system caused annual events to fall earlier in the calendar year at a rate of one day per 128 years (Richards 1999, 239). In other words, the average Julian annum comprised slightly too many days. Of temporal and religious concern, the actual vernal equinox began occurring in advance of its calendar date March 21, and astronomical new moons were reckoned earlier and earlier (Richards 1999, 352). This was of particular concern for the medieval Church; calendrical drift began causing the holy day Easter to fall on inappropriate days (Richards 1999, 249).

In A.D. February 1582, the Gregorian calendar was introduced by decree by Pope Gregory XIII (Duncan 1999, 261-289, Richards 1999, 239-256). In consultation with the astronomer Ignazio Danti (1536–86), Gregory became certain that the equinoxes were falling on incorrect days due to Julian drift (Richards 1999, 241). By A.D. 1582, the accumulated error of the Julian drift tallied more than ten days. In an edict issued eight months before the calendar reform would be instituted, Pope Gregory XIII corrected the ten-day drift, mandating that October 15, 1582 revert to October 4, 1582. This reformation eliminated about ten days of Julian error, accumulated over 1,600 years since the institution of Caesar’s calendar (Duncan 1999, 261-262). Through this mandate, Gregory advanced the recommendations of the 1562 and 1563 Council of Trent decrees; although it was on the agendas of both Councils, calendar reform was not sufficiently carried out until this papal decree (Richards 1999, 241).

Physician and astronomer Aluise Baldassar Lilio (1510–76) designed the Gregorian calendar for Pope Gregory (Richards 1999, 243). To correct the Julian drift, Lilio recommended that the first year of each century skip the leap year, except for years, such as 1600 and 2000, that could be divided evenly by 400 (Fredregill 1970, 14). The Gregorian reform hence mandated that the leap year would still occur every four years, but not during these particular years. It also included standards for calculating Easter according to the requirements of the medieval Church (Richards 1999, 352). Considering the calendar’s relevance now, David Duncan (1999, 289) characterizes the Gregorian scheme as “the world’s calendar: a code for measuring time that today all but the most isolated peoples use as the global standard for measuring time.” In comparable terms, E.G. Richards (1999, 256) comments that, following its introduction to Britain in 1752, “the Gregorian calendar was

later taken to the four corners of the globe on the back of the British Empire. It is now all but universally used.” In comparison to the Julian, the Gregorian system preserves three days every 400 years, allowing the activities of Western cultures to align almost uniformly with the sun until the year 4000.

Bonnie Blackburn and Leofranc Holford-Strevens (1999, 682) comment in *The Oxford Companion to the Year* that the “adjustment was necessary because the Julian year, consisting of 365 days, with a 366th day added every fourth year, has an average length of 365 days 6 hours, which is some 11 minutes 12 seconds too long, causing Julian dates to fall progressively further behind the sun.” However, the Gregorian schema was not instantly adopted by all Western countries. It took approximately 300 years to become the global calendrical norm and was often met with social, political, and religious resistance (Donaldson 1996b, 95). China resisted the Gregorian calendar until 1912, but it took until the 1949 victory of the Communists for the scheme to become established there (Duncan 1998, 289). Japan converted in 1873 in light of the Westernization ethos of the Meiji emperors; Bulgaria in 1912; Latvia, Lithuania, and Estonia in 1915; Russia in 1918; Romania and Yugoslavia in 1919; Greece in 1924; and Turkey in 1926 (Duncan 1998, 289, Richards 1999, 248-249). In 1806, Napoleon restored civil order by restoring the Gregorian calendar after a 14-year French Revolutionary period (Aveni 2000, 144). By an Act of Parliament in 1752, Britain introduced the Gregorian calendar or the “new style” (or *N.S.*) (Richards 1999, 252-56). Britain adopted the schema 170 years after the rest of Europe, becoming one of the last European countries to do so. In 1751, an Act of Parliament (24 Geo. II, ch. 23) was passed as “an act for regulating the commencement of the year, and for correcting the calendar now in use” (quoted in Richards 1999, 253). Presented to Parliament on February 25, 1751 by Lord Chesterfield, the Act was passed on its second reading, becoming law on May 22 (Richards 1999, 253). 12 days were controversially eliminated when September 14, 1752 became September 2, 1752 (Feeney 2007, 151, 281, Duncan 1999, 277-78). The reform was met with some uproar, as the popular opposition’s oft-cited motto attests: “Give us back our eleven days.”

When adopted by Britain in 1752, the Gregorian calendar was also dispersed to the British colonies, including North America and, later, Australia. In 2012, the autumn equinox in Australia was March 20; the winter solstice, June 21; the spring equinox, September 23; and the summer solstice, December 21 (Australian Bureau of Meteorology 2013). However, rather than following the solstices and equinoxes, Australia uses the international meteorological definition for the southern hemisphere, mandating three-month “meteorological” (rather than astronomical) seasons beginning the first of each month: September 1 (Spring), December 1 (Summer), March 1 (Autumn), and June 1 (Winter).

THE SEASONS OF THE SOUTHWEST: THE NYOONGAR CALENDAR OF WESTERN AUSTRALIA

Entwistle’s call to reform the Australian seasons is not the first. In the mid-1990s, Steve Symonds, a spokesperson for the Weather Bureau of New South Wales, comments: “We are cultural imperialists and we have just said what we want the weather to be. We came out here and said that there are four seasons in Europe so four seasons there should be here. Why should there be four seasons in Australia just because there are four seasons in London?” (quoted in Donaldson 1996a, 204). Also the notion of ‘Nyoongar time’ (Donaldson, 1996, 144).

In his analysis of the Simbo (Solomon Islands) calendrical system, Gell comments “the intertwining of calendars and power is not confined to the domain of the primitive, but equally extends to the processes of colonial subjugation” (Gell, 1992, 313)

Aboriginal seasonal knowledge “comprises organized artisanal knowledge gained through observation and adjustment over timeframes of thousands of years, often strongly linked with an ontology such as that shaped by the ‘Dreaming’ of Australian Aboriginal culture” (Prober, O'Connor, and Walsh 2011, 2).

Nyoongar seasons as embodied temporality, but Australian Indigenous seasons generally and examples from others too. Color typologies as well.

Green gives an overall account of the Nyoongar six seasons and their orthographies in Perth and Albany, WA. *Birok* comprises December and January and is known as *meerningal* to Albany Nyoongars; *burnoru* comprises February and March and is known as *maungernan*; Geran comprises April and May and is known as *beruc*; *Maggoro* comprises June and July and is known as Meertilluc:

“this they said could not be effected at present, as the tribes were so much dispursed [*sic*], and not until the *yellow* season (the bloom of the Banksia,) in December, January, and February. At this time the country is generally fired” (The Perth Gazette 7 September 1833, 142)

George Fletcher Moore, writing on 28 October 1833, reports “this is the season now for young parrots. I am told that the natives suck the honey out of their bills which the mother has just fed them with from the Banksia flowers” (Moore 2006, 292).

George Fletcher Moore from 6 March 1834: “They pull the blossoms of the red gum tree (now in flower), steep them in water, and drink the water, which acquires a taste like sugar and water by this process” (Moore 2006, 315).

From the *Our Place Newsletter* (June/July 2011): “**birak** – red – *mirda* – red symbolises heat, sun and fire; **bunuru** – orange – *yoorn t mirda* – orange symbolises abundance of fishing and lack of rain; **djeran** – green – *nodjam* – light green symbolises cooler weather and eucalyptus trees; **makaru** – blue – *wooyan* – dark blue symbolises rain and cold weather; **djilba** – pink – *mirda mokiny* – pink (or purple) symbolises growth of wildflowers and plants; **kambarang** – yellow – *yoorn t* – yellow symbolises return of hot weather” (p. 5).

“It seems that some natives divide the year into six different seasons; but many others divide it into four, which they call *cielba* [*jilba*], *mocur*, *ponar*, *piroc*, that is, autumn, winter, spring, and summer. The months are distinguished from one another by the moon, but they are not given individual names, or divided into weeks. Again the days are not distinguished except by the position of the moon” (Salvado 1977, 131).

“It is worth noting that the Australian natives...use the title ‘grass season’ of the period in which the new grass is born and the buds open, that is, the months corresponding to April-May of the northern hemisphere (our months, however, being autumn for them)” (Salvado 1977, 289).

THE INDIGENOUS WEATHER KNOWLEDGE PROJECT

Nyoongar Weather Calendar. Provide background and explain how reflects notions of endemic seasonality and embodied temporality. Begun in 2010, the Indigenous Weather Knowledge (IWK) Project features the endemic seasonal knowledge of nine Aboriginal cultures: Brambuk, D’harawal, Walabunnba, Yanyuwa, Jawoyn, Miriwoong, Wardaman, Yawaru, and Nyoongar. The website is in its early phases of development and represents a partnership between Indigenous communities, the Aboriginal and Torres Strait Islander Commission (ATSIC), the Bureau of Meteorology, and Monash University’s Centre for Australian Indigenous Studies (CAIS) and School of Geography and Environmental Science. The IWK Project is part of the Bureau of Meteorology’s *Reconciliation Action Plan 2012-2015*, one of the action items being “to liaise with community elders to expand traditional knowledge of weather and climate through seasonal calendar information” (Australian Government 2012, 2).

The IWK Project is interesting theoretically because it intersects with scientific meteorological knowledge. Secondly, it highlights the varieties of endemic seasons in Australia. And the knowledge contained within can be read phenomenologically. Actual season boundaries shift according to places, so recognition of seasons occurs through senses and incorporation in environment.

Explain why the IWK Project constitutes a phenology of the seasons. Phenology is derived from the Greek word *phaino* for “to show or to appear.” It can be defined as “the study of periodic biological events in the animal and plant world as influenced by the environment, especially temperature changes driven by the environment” (Schwartz 2003, 3). I argue that the IWK Project may be best read as a phenology of the seasons. It provides major waymarks and seasonal indicators, but the actual seasons are only learnt through embodied experience, hence phenomenologically to corporeally comprehend the phenomena which indicate seasonal movement and are linked to the embodied lifeways of people in a place. A phenology is essentially a catalogue and for genuine learning to take place, the perspective of phenomenology is important.

The Indigenous Weather Knowledge Project, discussed in more detail at end of article, although an online representation of the endemic Australian seasons, offers a tool for navigating the seasons phenomenologically. Here I will discern between a phenology of the seasons and a phenomenology of the seasons. The IWK Project offers a phenology of the seasons, linking the first occurrences of plants and animals to the passage of seasons, which are wholly contingent and shifting boundaries. I argue that a phenomenology of the seasons—embodied experience of seasonal indicators in a place such as the South-West of WA—is contingent on a phenology of the seasons and that the IWK Project offers such a tool. So that people know what to expect in terms of flowering cycles, for example.

CONCLUSION

Moreover, “a boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something *begins its presencing* [italics in original]” (1971, 152).

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