

Governing Climate: Griffith Taylor's Climographs and Contemporary Blind Spots

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Figure 1: Climographs from Australia, T. G. Taylor, 1916

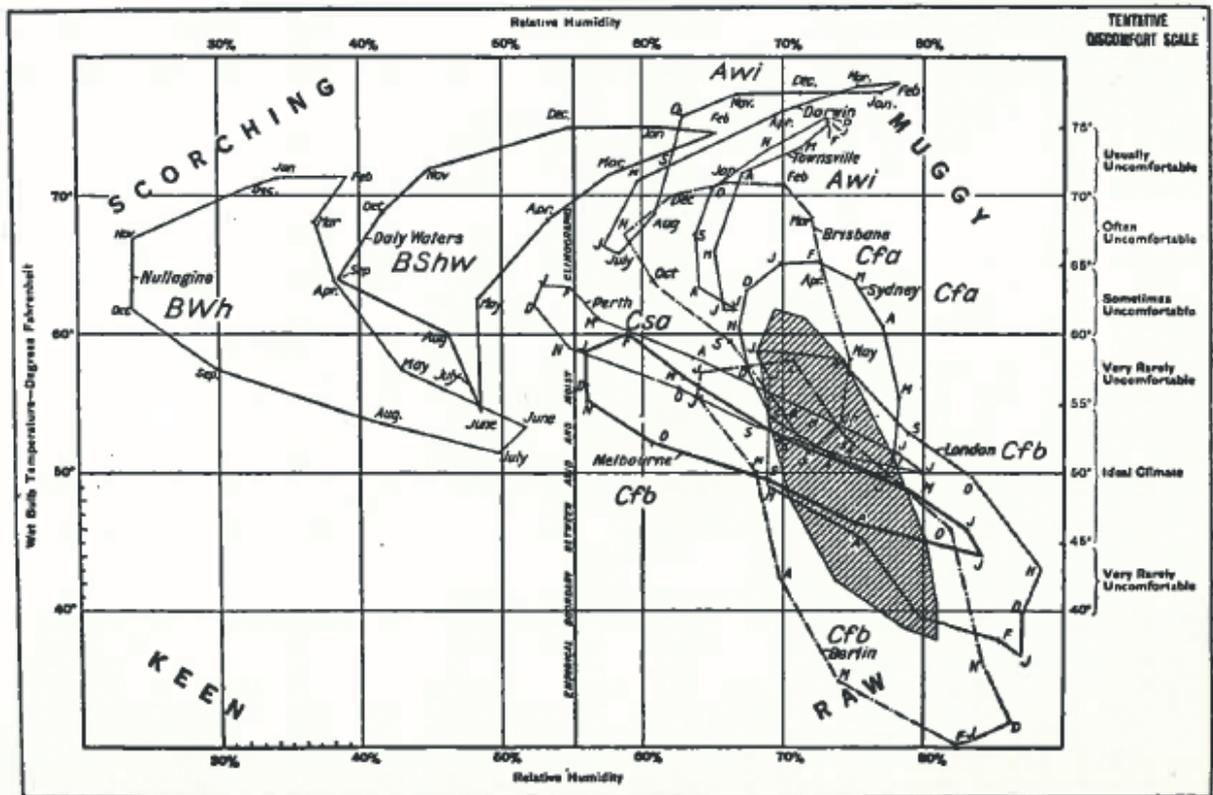


FIG. 26.—CLIMOGRAPHS FOR AUSTRALIA, SHOWING HOW THE LOCALITIES APPROACH THE FOUR TYPES OF DISCOMFORT

The shaded climograph shows the most habitable type for white settlers. The climatic formulæ used by Köppen are added. The Wet-Bulb Discomfort Scale is at the right

The lines tell the story. Indeed they tell so many stories – linear narratives with a beginning, middle and an end. These are stories about climate, particular stories, from a particular time: which places are ideal for “civilisation”, which are merely suited to it and which locales are beyond the climatic pale. This was a time European prejudices about Indigenous people combined with an

understanding that the atmosphere could only be understood with instruments, numbers and tables, a confluence which precluded the invaders from learning about climate from those who had long experienced it. It was a time when data, lines and graphs told the stories of climate. The story of the climographs is that northern Australia is climatically unsuited to European society – beginning, middle and end.

The lines were innovations when they appeared. Their creator, Thomas Griffith Taylor, (1916) was Australia's most distinguished geographer, an influential public intellectual and one of this continent's more prominent academic exports.¹ His creation circulated way beyond his own publications and the Commonwealth Bureau of Meteorology's Bulletins. In 1920 Griffith Taylor's lines attracted comment in no less a journal than the American Meteorological Society's *Monthly Weather Review*.

Are these lines governing or governed? For many decades they shaped policy. They informed decisions about who would live where in Australia: what development could take place in northern Australia; who could undertake it. These lines set limits on the possible. Or, were they just reflecting climatic impediments? If climate is reduced to averages of temperature and humidity, that might be the case. But as climatologist H. H. Lamb (1982, p.8.) has argued, climate is not just enumerated means; but also extremes and patterns across time (decades usually). So these lines govern a particular understanding of climate, which governs what can and can't be done in Northern Australia. However, these lines are governed by a particular modern European way of grasping climate. They are applied to a peculiar way of defining territory and slicing up spaces of governance.

These lines are labelled 'tentative' but their presentation is resolutely empirical. X-axes, y-axes, grid lines, numbers, the terms on the 'discomfort scale' are subjective, but their pairing with wet bulb temperatures and relative humidity readings gives an impression of solidity. We can picture the instruments, the diligent observations, meticulous, ordered recording of numbers in rows and columns, and finally, the statistical calculations. But the stories these lines tell unmask the British colonial imaginary. London and Melbourne as 'ideal' climates – only if you don't have to live there! Ideal for whom and for doing what anyway? Darwin 'usually uncomfortable'; speak for yourself, I love the build-up! This is my fifth and I've never had to resort to air conditioning, either at home or at work. It's the dry trade winds that play merry hell with my sinuses. Yet, this subjectivity dressed as objectivity tells us so much about their methods and thinking. A little critical questioning and the thought-prints become visible and this hall of mirrors becomes navigable.

So, a new conversation starts. A conversation well served by remembering what Australian governments and science and law studiously forgot for so long - that there were people here for millennia before invasion and colonisation. Amnesia is integral to the colonial project. With each colony a unique constellation of things is forgotten or ignored. When Europe landed at the various points along this continent's jagged coastline, it came with a vast, even ingenious store of knowledge about the world. Knowledge that was hard won, knowledge resulting from painstaking endeavours. But it was knowledge contaminated by potent prejudices. Prejudices that governed what constituted knowledge. Prejudices that made them conclude that they could learn nothing about weather and climate from those who had been here for so long before them. Prejudices that assured them that the ideas they brought were all they needed to think with in their quest to quell these 'new lands'.

1. For a comprehensive study of Griffith Taylor's life and work see Carolyn Strange and Alison Bashford (2008), Griffith Taylor: Visionary, Environmentalist, Explorer, Canberra: National Library of Australia.

Aboriginal people have lived in north Australia for at least 50,000 years. In the dozen or so millennia since the end of the last Ice Age, the region's climates have bequeathed long annual periods of heat and drought broken by distinct periods of storm borne rains and monsoonal downpours, sometimes punctuated by deluges brought by tropical cyclones. Surviving in this environment requires skill. Surviving for so long can only result from intimate knowledge of the vicissitudes of land, sea and sky. But European invaders did not, based on surviving accounts, fully avail themselves of this treasure trove. There are many accounts of newcomers asking Indigenous people about landscapes and watercourses, where recent historiography now records many examples of Aboriginal people helping or even leading explorers; we have no evidence of similar exchanges about weather or climate. This might in part result from the abstract nature of climate and seasons. That Europeans had developed elaborate, detailed and seemingly verified models of global climate by then is also important, however, that two vital elements to this (his)story are the prejudices the invaders brought about Indigenous people and a concomitant belief that we can only grapple with climate with instruments, data, tables and maps. Elaborate understandings of climate and seasons that linked weather to complex ecological changes have had, till recently, a penumbral existence. Until anthropologists started to ask Aboriginal people about their understandings of weather and climate, the rest of us were foolish enough to think that they didn't have any. Until then, we didn't realise there were other ways of knowing this place. Before that time, we had no idea of how much climate in the Northern Territory varied from place to place – think of a mosaic rather than lines and bands.

This happened the world over. North Australia is particularly fortunate that Indigenous understandings of climate have survived the material, governmental and epistemological onslaughts of colonialism. We can get a sense of what was ignored, what was forgotten and what was excluded – delineated as out of bounds – in the project to subdue and govern northern Australia. In the language of Michel Foucault's lecture of 8th February 1978 (2007), this project ignored the multiplicity and governed the territory. Government turned its mind to how Europeans could control and exploit the territory of Australia including its tropics. But governing the multitudes entailed excluding those defined as anything other than 'white European'. In the case of Aboriginal people, exclusion involved confinement, surveillance, forcible removal, efforts to absorb 'difference' and assimilation. Crucially, they were excluded from the modern governmental and epistemological imaginary of Australia and deemed to have nothing to contribute. Government had its own institutions, with their own methods, practices and ways of knowing. These ways of knowing – empirical and observational, much like Indigenous environmental knowledge – were total. They encapsulated the world and defined what was seen and unseen. Australia's meteorological offices – colonial and federal – and their meticulous, systematic practices exemplify this.

Governing Climate: Meteorology

Australia's colonial weather bureau and their federal successor - the Commonwealth Bureau of Meteorology – have been remarkable institutions. Their networks spread with the telegraph wires and by 1860 covered much of southern Australia. With the coming of the Overland Telegraph Darwin, Pine Creek and Daly Waters were part of the South Australian network by 1875. Vast quantities of data circulated on these networks. Weather as rain volume, temperature, atmospheric pressure, humidity etc, was measured. With so little atmospheric physics understood before the 1920s (and much to be elucidated today), meteorology was a largely statistical branch of modern knowledge. Numbers were paramount. These enumerations were recorded and this rapidly growing sea of data provided the basis for stories about weather and climate. Methods of observation, timing of observation, units of measurement, all were standardised based on accepted principles in Britain. Weathermen saw themselves as scientists. Their work, though, was the essence of statecraft: defining territory by numbers in order to control it.

A science to be sure, Meteorology was also an indispensable political technology. Andrew Lackoff and Stephen J Collier (2010) define a political technology, from Foucault, as ‘a systematic relation of knowledge and intervention applied to a problem of collective life’ (p.244). The problem of collective life here is that of exploiting and developing tropical Australia in all of its otherness to the temperate neo Europe of Australia’s south. Until the mid-twentieth century this problem was defined in racial terms and climographs were a considered attempt at answer. From the earliest colonial days industrialising the north was a problem approached with the political technology of science, which itself used the ultimate political technologies – statistics and numbers.

I doubt that Australia’s early scientific practitioners saw themselves as political technologists. They were members of disciplinary professions that had their methods, their theories and ways of seeing. They worked in institutions that had a raft of standardised procedures for measuring, recording and analysing weather. Through the acts of preserving this data and subjecting it to statistical calculation they created modern climate. Using tables of numbers, charts, graphs and maps they communicated their findings to other scientists and the broader literate world. Numbers and lines seemed to guarantee objectivity. They vouchsafed truth and reality. Moreover, this method was to those who practiced it self- correcting and critical. Data could be checked, calculations re-examined, errors corrected. The extraordinary development and refinement of human understanding of the natural world through the processes of modern science has been profound. So much so that it has lured many into thinking that it was a totality probing the totality of material existence. That it worked so well kept its practitioners and its faithful in the dark over its critical weakness. Enacted as integral to governing, this was a way of seeing blind to other ways of apprehending nature and the world.

Philosophical criticism exposed these weaknesses again and again throughout the second half of the twentieth century. On the other side of this from Griffith Taylor’s 1920s climographs we must be careful not to sneer. I certainly must be. I first learned about them in the 1990s. Something of a product of my times, I recognised the incoherence of its focus on race. Something of a product of modernity though, I found the idea of quantifying climatic discomfort more than a little seductive. Until I experienced the complexities – long term – of Darwin’s climate I also did not re-think any aspect of the climate science that is the basis of the climograph. To my detriment, I also knew nothing about Indigenous understandings of weather and climate till about 15 years ago. We must not commit the historian’s cardinal sin of anachronism nor the egregious scholarly violation of failure of imagination. All of the criticism that opened this essay stands. But far more interesting (and challenging) than laughing at mistakes of the past is trying to grasp how they made sense. Griffith Taylor’s climographs had authority because they were products of the scientific method in a scientist governmental culture. Accepted as sound they communicated important knowledge in the language of this culture. It was testable and so subject to checking, verification and, if need be, correction. In the minds of those who read and used it, these graphs represented reality. They explained some things and seemed to answer important questions. We must recall that they were genuinely innovative. People graphed average temperatures all of the time, but till then did not relate these to comfort and periods of comfort/discomfort across the calendar year. Representing different places on the same chart to enable ready comparisons was also new. Griffith Taylor had found a new way of applying average temperatures. Attempting to render subjectivity objective through numbers has been part of modern scientific culture. Even to those who challenged Taylor’s claims this method and process meant something. Griffith Taylor’s climographs answered crucial questions and he made sense through their methods of creation, modes of communication and the world view that they were both a part of and that they reinforced. This was how modern technocrats saw the world and sought to control it.

Blind Spots Past and Present

A potent challenge looms for us now. We've seen the blind spots of the past. We've come to see how something strange can make sense in its time and place. Do we, though, have the imagination to see any of the blind spots in how we seek to understand our world? Can we see the limits to our ways of knowing? Can we identify how contemporary objects of governance and political technologies limit our apprehension of weather and climate? To me, these questions are among the most exciting for any practicing historian to engage with.

Even ideas that work can obscure or distort. Mean values of quantified weather phenomena are at the kernel of modern understandings of climate. Through calculation of these means weather in numbers becomes climate. This has been the case for well over a century. We cannot attribute this endurance to mere convention. This technology of averages answers so many important questions and illuminates so much that humans have sought to know. It is indispensable in making informed decisions. It is how we are able to identify global warming at work - arguably the most compelling issue of our time - and plan for some of its expected ravages. But this approach to climate, and indeed governance relating to climate, is itself blind to a vital aspect of climate: the timing and length of seasons, crucial to activities such as agriculture. Global warming can, does and will manifest in many aspects of local climate. Seasons might get warmer or wetter or drier, some comparative to which a number can be assigned and statistics calculated. But they might also come later, or earlier, become longer, shorter. In climates as variable as some across Australia some seasons might only come three times a decade instead of annually. Temporal patterns across decades might change. Mean values, defined by the calendar month, do not have the scope to see such dynamics on time scales beyond that of the year. They imply that temporal patterns repeat each year, which might be a good enough fit for Europe but misses a key aspect of climate across Australia. For north Australia, this means that the regime of rainfall appears far too ordered and that the enormous variability in the timing of rains is rendered invisible. We can only know this variability by looking historically at time sequences of rain and its absence, and the diligence of meteorologists in taking and preserving observations that will provide us with this knowledge. With this we will be able to identify other vital aspects of local climate change. To better understand what is happening we need to embrace other ways of knowing - the treasure of Indigenous knowledge to be sure, but also other ways of knowing, using traditional modern scientific data of meteorologists and climatologists. To do this we must imagine and try to see some of the blind spots of knowing in our time and place. Governing for climate change means distinguishing between the global and the local. Governing for climate change also means understanding that, the tools for understanding the global, physical problem of a heating atmosphere are only part of what we need to think with if we are to anticipate what will happen across the mosaic of climates of northern Australia. I've identified one contemporary blind spot. But this is just the start of a conversation that needs to identify others and imagine perspectives that might negate them.

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