

## **Two-Way: An Alternative to Synoptic Rhetorics of Climate Change**

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When we consider the future of scientific and public deliberation around climate change, two problems immediately become apparent. Both stem from the topology or landscape of our current discourse about climate change. The first is a problem of scale: traditionally in rhetorical theory, exigencies can only be modified at the scale of polity (Bitzer, 1968, p. 8), and climate—at least as presently discussed—is an exigence that exceeds the size of any polity. The second is a problem of dimensionality: a focus on “the future” emphasizes time over space, teleology over diversity, and so continues to privilege Western technocratic accounts of climate over the accounts of the coastal, desert, and arctic communities for whom the future of climate change is now (Hulme, 2011).

We must address these problems of scale and dimensionality in order to develop more just and effective deliberations surrounding climate change. In this essay, I take a step toward that goal by singling out a powerful determinant of our current topology of climate change—synopticism—and “folding” or re-inventing it along guidelines suggested by the traditional art of Aboriginal Australians, who have kept the longest known account of climate change on the planet. The results indicate ways in which rhetorics of climate need to diversify in order to make themselves useful to those communities most affected by climate change.

### **The View from Nowhere**

Synopticism in climate discourse is the apparent comprehension at a glance of the whole of Earth’s climate and/or its change over time. Synopticism and climate science co-evolved: the concept of “climate” as opposed to local weather arose with the synoptic

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isotherms, tables, and maps composed by Alexander von Humboldt and other scientists in the 19<sup>th</sup> century; reciprocally, these men were driven toward synoptic techniques by their search for explanatory patterns in the diversity of life in their European and North American contexts (Schneider & Nocke, 2014, p. 12).

The political consequences of synopticism have been amply detailed by critical scholars. Michel Foucault (2007) argued that John Graunt's synoptic mortality tables were the technical means of averaging heterogeneous individuals into a coherent "population" able to be controlled by "physiocrats" (p. 103). For Donna Haraway (1988), this synoptic "gaze from nowhere" has enabled the technocrats who wield it to assert superhuman moral authority on the grounds that they have transcended normal human moral liabilities through objectivity (p. 381). From this ironic stance, which Haraway (1997) elsewhere calls the "god trick" (p. 136), technocrats impose norms of white masculinity on the bodies of women and others (including non-humans).

For the purposes of climate discourse, the problems with synopticism can be summarized as follows: the "god trick" of global climate simultaneously (a) certifies technical experts (and their state and corporate sponsors) as the only actors capable of surveying and controlling climate change; and (b) disqualifies individuals and their polities from taking effective climate action, particularly in non-Western contexts.

Despite these problems, it is not possible or even desirable to do away with synoptic discourses of climate. The identification of dangerous trends such as "greenhouse effect," "global warming," the "ozone hole," and "climate change" would not have been possible if we had not been able to compare synoptic maps of climate over time (Schneider & Nocke, 2014, p. 13). Our questions become, then: how to articulate a global view with local action? And how to decenter Western ocularcentrism so that views of climate from the margins become just as vivid and consequential for us?

One answer lies in topology—in adding a spatial account of synopticism to the critical account. The critical account demonstrates the significant political effects of synopticism, but has its limits: it can imply that since synoptic regimes are totalizing, meaningful "intervention" can only come from outside or above (Ingold, 1993, p. 39). This logic has troubling implications for vulnerable communities.

By contrast, a spatial view constructs synopticism as a topology, a network of communal beliefs, values, and norms (*topoi*) that is re-

freshed every time a discourse community argues about a synoptic climate map (Walsh & Boyle, 2017, pp. 1–12).<sup>1</sup> The topology of synopticism, at least in American environmental discourse, is scaffolded on the *topoi* of appearance/reality, quantification, similarity/difference, degree, and part-to-whole (Walsh & Prelli, 2017). In other words, in order to create “ecosystems” as bodies amenable to technocratic control, early ecologists first refashioned the visible landscape as a quadratic grid (appearance/reality), counted the plant species in each quadrat (quantification), added up similar species across the grid and compared totals to determine dominant species (similarity/difference and degree), and then linked dominant species into “zones” inscribed over a political map of the U.S. (part-to-whole).

This topology is re-generated every time a synoptic view of climate is created or discussed. If communities vulnerable to climate change—or even communities of non-experts—want to disrupt synoptic topologies, they can’t reasonably intervene from outside or above. Instead, they need to re-invent or “fold” the topology from the inside, to make room for local activism. “Folding” is a term from studies of protein topologies; it describes a kind of non-breaking deformation of a protein that preserves its characteristic configuration even as it opens up new sites for attachment and productivity. A succinct example of this kind of folding in a rhetorical topology is provided by Ceccarelli’s (2013b) study of the topology of “bio-prospecting.” Transnational pharmaceutical companies used this *topos* to justify claims on indigenous property in the Brazilian rain forest, warranting it with the argument that the forests constituted a “global commons” that could not for the good of humankind be reserved for the use of local communities. Local activists did not have the finances or leverage to force these corporations to change this topology; so, they folded “prospector” into “pirate”—maintaining the exploratory nature and even the plosive “p” sounds of the metaphor while twisting its valence from benevolent to malevolent (and imperialist, a valence that touched a nerve in Brazil). “Bio-piracy” thus became the central *topos* of a productive protest campaign that resulted in the denial of research permits to foreign botanists.

My purpose in this paper is to investigate foldings like this for the visual rhetoric of climate change. To re-invent synopticism, to fold it so that it can produce local agency, we must look outside the Western tradition to communities on the leading edge of climate

change. A particularly promising topology can be located in the art of Aboriginal Australians, specifically in the recent Paruku Project that generated hybrid artistic–scientific accounts of climate change.

### **Aboriginal Australian Acrylic Painting (AAAP)**

In approaching Aboriginal Australian rhetorics, however, we must take care. The field of rhetoric has done very little to investigate these cultural practices, and this work relies too heavily on outdated colonialist source material, thus re-inscribing racist tropes of “stone-age” and “early human” on Aboriginal rhetorics.<sup>2</sup> It doesn’t get much better in science studies, where attempts to introduce principles from non-Western natural philosophies have resulted in charges of cultural appropriation, in part due to the overwhelmingly white male constituency of this scholarly conversation (TallBear, 2013; Todd, 2014). But these failures must not stop us from seeking alternatives to synoptic Western scientific and academic discourses of climate; if we stop, we will fail to submit our enormous privilege as academics to the service of the communities most imperiled by climate change.

Anthropologists and scholars of comparative rhetoric have suggested a promising way forward: we should treat climate as a common “matter of concern” (Latour, 2004) around which we can work with threatened communities to demonstrate the power of their rhetorics even as we reveal the limits of our own (Mao 2003; Morphy 2007). To adapt the Australian anthropologist Howard Morphy’s argument, it is our common climate risk that creates the possibility for cross-cultural rhetoric, and it is our diversity that makes it necessary.<sup>3</sup>

Aboriginal Australians are the ideal experts to help us shape new topologies of climate change discourse because they have assembled the oldest known continuous artistic record—nearly 50,000 years—directly engaging issues of climate and environment. Aboriginal Australian art encompasses a staggering range of genres from sand and body art to painting to sculpture with found objects. Readers are directed to the References for more information on this rich tradition (in particular, Morphy, 1998). As the Aboriginal artists who participated in the Paruku Project primarily work in acrylic painting, I will be focusing on this genre, which had its genesis in Papunya in the 1970s and has flourished across the Western Desert since (Bardon & Bardon, 2004).

Aboriginal Australian acrylic painting (AAAP) employs two

rhetorical practices that can help us fold synoptic maps of climate change into new possibilities for collaborative deliberation. Against objectivist *topoi* (e.g. appearance/reality, similarity/difference, quantification), AAAP posits Country; against *topoi* of reduction (part/whole, degree), AAAP offers Law.

### *Country*

Aboriginal Australian acrylic paintings are stories, and they are maps. On a two-dimensional canvas, AAAP conflates time and space to shape narratives of Dreaming. As a cosmology, Dreaming is hard to comprehend with minds cultivated according to Western scientific norms since it respects so few of those norms—not only those dividing space from time but also those segregating human, animal, and landform; past, present, and future; and religion, law, and natural philosophy.

Take, for example, an AAAP by a women's collective in APY Lands (Figure 1). Titled "Seven Sisters," it takes as its narrative frame a story about the constellation we know as Pleiades, who are sisters pursued by the lustful old man Nyiru (Orion). The episodes of the story—Nyiru's various stratagems and the sisters' foiling of them—radiate out from the central star form. But as they go, these storylines simultaneously map and encode the locations of life-saving waterholes, the proliferation of bush tucker (food) in season, social relationships among the Pitjantjatjara artists and their neighbors, and transformative natural events such as floods, fires, and droughts. This complex visual landscape is "Country," an English word that Aboriginal artists have adopted as a rough expression of their entanglement with their environment—their genesis in it, their daily dependence on it, and their future duty toward it (Fox, 2015). Artists such as the women who painted "Seven Sisters" have reported to researchers that when they paint Country they are caretaking and re-inventing it, sustaining it through change; concomitantly, the act of painting Country sustains the artists and their kin—physically, economically, culturally, and spiritually (Morton et al., 2013, p. 230).



Figure 1: "Seven Sisters," 2016. Women's Collaborative (Tjungkara Ken, Yaritji Young, Freda Brady, Marinka Tunkin, and Sandra Ken) Pijantjatjara language group, APY Lands, Southern Australia. Nevada Museum of Art, 2017: Collection of Martha Hesse Dolan and Robert E. Dolan.

The notion of Country makes several helpful folds in synoptic topologies of climate. First, by folding the temporal and spatial dimensions of traditional climate graphics into a narrative visualization, Country remixes the traditional antinomy between human history and the world "out there" that forms its backdrop—an antinomy performed over and over in "burning world" climate graphics that paint red blotches of warming probabilities over a pallid sketch of the continental globe.

Second, Country tells nonhuman and human life stories of a piece instead of graphing climate as a bold black line of nonhuman activity to which human industry has (or has not, if you're a fossil-fuel-industry advocate) prompted an abrupt red detour; the most famous example of such a climate graph is the "hockey stick" of average global temperature that shows a flat black historical line until 1900 and then a sharp upward spike as fossil fuels come online. Country, by contrast, does not license such a simple cause/effect view of human/natural interaction.

Consequently, painting Country is in its essence an act of stewardship; this ethos stands in stark contrast to many climate scientists' disavowals of political responsibility for their projections. These folds to climate topologies simultaneously dispel the myth that the world is too big for human communities to steward, and fold care of self in with care of environment.

### *Law*

As the riot of color, line, and shape in "Seven Sisters" hints, Aboriginal Australian acrylic painters have developed sophisticated techniques to articulate the myriad stories of Country across a single two-dimensional canvas. As John Carty (2011) discovered in his multi-year study of AAAP practices in Balgo, the keys to this articulation are abstractions that support multiple simultaneous interpretations (p. 11). For example, a simple shape like the circle at the center of "Seven Sisters" can signify a rockhole, an ancestral being, a star, a "sitting-down place" (camp), and a fire. These simultaneities are drawn out through ceremony. In fact, the word for painting in Kukatja—one of the mother tongues of Balgo AAAP artists—comes from the word for "poking," which evokes the origins of painting in sand art, which in its turn began with the tracks made by dancing feet, hands, and sticks across ceremonial grounds (Watson, 1996, p. 63–70). The dancing/painting of Country thus remains a critical component of the rites that re-invent social relationships in the Western Desert.

Law is the English word used to indicate these continually re-negotiated relationships—not only right relationships to Country, but to *kartija* (Western settlers) and other non-Aboriginal folks. Law has been described as a "dynamic jurisprudence of duty" (Rose, 1997, p. 127) and as a "reticulum," a network of sensitivity and reciprocal obligation (Fox, 2015, p. 20).

In AAAP, Law appears not only as the Country painted but also in the methods of painting. Carty (2011) singles out three forms of abstraction that are particularly important to Law: outlining, dotting, and concentricism (p. 10). These methods reject totality at every turn. Outlining indicates the location and shape of an actor without fixing its identity. Dotting undercuts continuity even as it suggests it; fills space as soon as it makes it; obscures secret forms as soon as they are revealed. Concentricism performs the instability of quantity and quantification in desert life. Take for example this partial cartoon of a painting by Fred Tjakamarra (Figure 2):



Figure 2: Cartoon of part of “Untitled” by Fred Tjakamarra, reproduced in Carty, J. (2011). *Creating Country: Abstraction, Economics and the Social Life of Style in Balgo Art*. (PhD), Australian National University (p. 229).

Tjakamarra, a Lawman and custodian of Water Dreaming, depicts the routes and processes by which surface water drains from lakes (polygons) and fills community rockholes (circles) during the shift

from wet to dry seasons around Balgo. The networked shapes remind the viewer of the interdependence of being in this fragile environment. The dotting, outlining, and concentricity of Tjakamarra's method perform the dynamics of the water at the same time they suggest the precarity of the life dependent on it.

Thinking through the contingency and fragility of Law suggests a few ways to re-invent our dysfunctional topologies of climate. Certainly, we can find hints of the humility and intersubjectivity of Tjakamarra's method in technical climate graphics, at least when they dot the lines that indicate model projections and make gray shadows of those projections' uncertainties. Still, these graphics reduce climate futures to a few bold strokes drawn by industrial carbon emissions, a picture in which local communities cannot locate themselves. A graphic like the hockey stick or the burning world invites us to stand back and blink in dread at a warming climate controlled by no one, or perhaps by Chinese and American coal plants, or perhaps by the scientists that programmed the models. By contrast, Tjakamarra's *Water Dreaming* interpolates its viewer in a web of interaction that shifts with the viewer's daily thirst, and pushes back against it in the dry season. Both images suggest the future; only one suggests the viewer has any part in shaping it.

### *Paruku*

To render more concrete these suggestions for refolding synopticism through Law and Country, I now turn to the Paruku Project of 2011–2012, an artistic-scientific endeavor during which geoscientists, artists, and traditional landowners worked together to steward Country around Paruku (Lake Gregory) in the Western Desert.

In 2001, Paruku was designated an Indigenous Protected Area (IPA), which qualified the Mulan Community to receive government funds earmarked for conservation and restoration projects around the lake. But while the IPA designation might have seemed the ideal rhetorical occasion for scientists and local custodians to collaborate, in fact Aboriginal and scientific views of conservation proved problematically incommensurable. Archaeologist John Carty and artist Kim Mahood explain:

For a scientist committed to broad environmental concerns, an arid zone wetland like Paruku should be listed with the Ramsar Convention as a wetland of international significance. For the Walmajarri custodians this

means a loss of autonomy they are not prepared to accept. And the costs and planning associated with carrying out scientific investigations carry no weight with Aboriginal people—if an ancestral being has been irritated by a drilling operation the whole enterprise must be aborted, regardless of the financial and logistical investment. (Morton et al., 2013, p. 22)

These cosmic incommensurabilities (Harris, 2005) led to the mothballing of several scientific initiatives in Paruku, despite the community's expressed need for technical help with exigent environmental threats—particularly a worm infestation of the spangled perch that the Walmajarri rely on as an important food source.

The Paruku Project was designed to work around cosmic incommensurabilities between Aboriginal and scientific world-views in two ways: first, by identifying issues of common concern—the worm infestation, range management through controlled fires, archaeological investigations to establish the primacy of Aboriginal land rights in the area; then, by creating collaborative, hybrid artistic–scientific responses addressing these concerns that would be productive and meaningful to both communities of practice.

This project required, in Carty and Mahood's words “a particular breed” of scientific collaborator, “predisposed to hearing other voices and recognising other values, driven by empathetic curiosity and respect” (Morton et al., 2013, p. 22). Archaeologists were joined by geoscientists and senior Walmajarri Lawmen and women on excursions to date rock layers containing Aboriginal artifacts; a team of biologists trained local custodians to use Cybertracker technology to monitor water quality; and, Australian artists Mandy Martin, Kim Mahood, and others joined local AAAP artists in painting Paruku Country, each in his/her own idiom.

The principal results of the collaboration were five large maps—Palimpsests, Pathways, Fire and Water, Collaborations, and Kids: Mapping the Future. These maps each began with a base layer of topography, outlined using Western GPS techniques, over which AAAP artists painted Country in various forms—names of tribes and clans, traditional icons for ancestral beings, dots to mark the extent of range burns and floods, etc. The Kids map was particularly interesting, as AAAP is traditionally practiced only by senior Lawmen and women who have earned the right to paint Country; in this case, a grid of 48 small canvases was pieced together on the floor of the Warruyarnta Art Centre in Mulan to form a map of Paruku Country,

senior artists indicated what should be drawn on each canvas, children took the canvases home and painted them as directed, each in their own style, and the map was reassembled at the art center. In addition to the five core maps, over 80 individual paintings were created by local and visiting artists. One of them, “Parnkupirti Layers” by Hanson Pye, exemplifies the re-invention of synopticism accomplished by the Paruku Project (Figure 3):

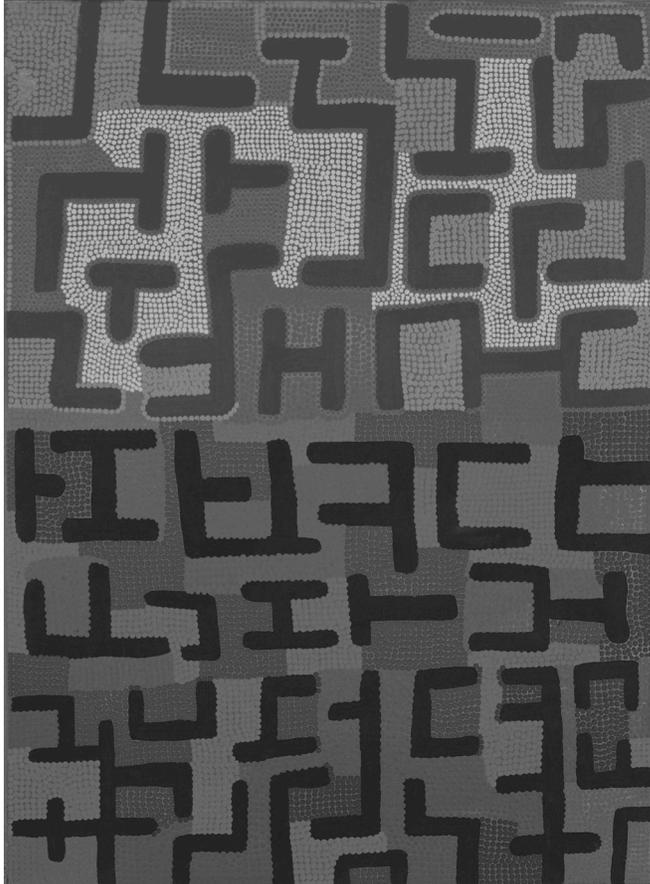


Figure 3: “Parnkupirti Layers,” Hanson Pye, 2011. Reprinted in Morton, S., Martin, M., Mahood, K., & Carty, J. (Eds.). (2013). *Desert Lake: Art, Science and Stories from Paruku*. Collingwood, AUS: CSIRO, p. XX.

Pye was inspired to make this painting after guiding archaeologist Jim Bowler to Parnkupirti Wash, where a flaked cobble core establishing Aboriginal presence in the region 45–50 kya was excavated in

2008. Pye showed Bowler where his ancestors had made their camps in the lee of the cliff, and Bowler showed Pye where cobble layers in the cliff marked wet years around the Paruku lakeshore. Pye framed his artistic response to the visit using a “Dingo Dreaming” narrative—the story of two ancestral Dingo brothers hunting an emu up Sturt Creek and making/naming landforms, traditional cultural sites, and clan relationships as they go:

Like that Jim Bowler, when he digging up, you see two different colours, layers, one at the top one at the bottom. It's this. [...] At this green part here you'll get some witchetty grubs. The green stands for trees, like leaves. [...] And this like I'm painting now, the brown part, not the black one, the black ones are old—the flood came bringing those stones and sands, building it up on my old ancestors' ground. [...] The black part is oldest layer—tools, axe, sandstone for making weapons smooth, women used to have grindstones for grinding. That's the whole area where we're living now: this area. The young and old! [...] ] This one [bottom part of the painting] is from the *Waljirri* [Dreaming], this one [top part of the painting] is from the *kumarri* (present day). But they still the same. The story was told to me from my father, my grandfather, and now I'm telling the story. All the stories come from here [black layer of the painting]. (p. 27)

All the folds that make climate into Country and science into Law are apparent in the painting and Pye's gloss of it. The artist layers scientific and cosmological origin stories for the rock layers at Parnkupirti and makes clear his stewardship of Parnkupirti in this act. His painting re-establishes the network of social relationships between old and young, men and women, Walmajarri and *kartija*. The “Dingo Dreaming” puts the scientific information into perspective for the Walmajarri (p. 25). At the same time, the unique impact of the scientific perspective is clear in the cross-section perspective of the painting, an unusual one in AAAP, which tends to prefer map view (albeit thickly layered with topologies of time, cause/effect, and morality). The information from scientists thus serves not merely to confirm the traditional Country and Law of Parnkupirti but also to alter its perspective and enrich its detail.

For their part, the scientists were guided by the Lawmen and the “Dingo Dreaming” narratives to sites likely to hold the very early artifacts they were seeking, and they were able to publish scientific papers in traditional disciplinary journals based on their findings. They also had their perspectives altered as they worked with and learned

from the Lawmen: they had to adopt a different tempo for their work; they had to accept cultural boundaries on their activities (where and when they could go and dig); and, lacking the assumed authority granted their epistemological practices in the West, they were in the position of having to negotiate and articulate, rather than erase, incommensurable epistemologies regarding their objects of study (more on that point shortly).

Kim Mahood and the project biologists explained the Fire and Water maps using a similar and succinct statement of reciprocity: “This is an ambitious work-in-progress to link the scientific technology of Cybertracker monitoring with the simple technology of painting, and in the process to make the information accessible to everyone” (p. 136).

These differences between traditional Western scientific approaches to climate and the hybrid perspective of the Paruku Project can be dramatized by viewing Pye’s painting alongside the Australian Bureau of Meteorology’s State of the Climate Graphic for 2016 (Figure 4):

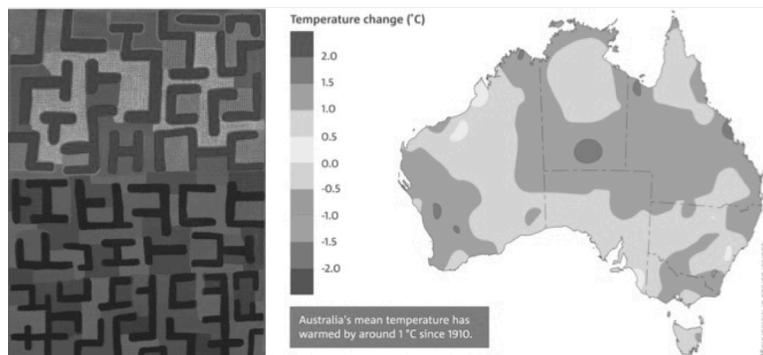


Figure 4: “Parnkupirti Layers” compared with a figure from the “State of the Climate 2016” report from the Australian Bureau of Meteorology (<http://www.bom.gov.au/>) in which Paruku would be sited on the roughly vertical border between zones of .5 °C (yellow) and 1.0 °C (orange) average warming since 1910 in eastern Western Australia.

Although the two maps share a strikingly similar color palate of reds and yellows as well as similar abstract forms (box- and bracket-like shapes), the synoptic map on the right reinstates a topology of Anglo-Australian authority, via which technocratic agencies certify and mitigate climate change in Western Australia while downplaying

Walmajarri land rights and custodianship. Pye's painting and the other five Paruku Project maps, by contrast, fold scientific information into the moral structure of daily life. The Paruku Project thus vividly performs at least one way in which synopticism can be re-invented along lines suggested by indigenous rhetorics to form grounds for joint action in the face of climate change.

*Two-Way*

Triumphs such as Pye's painting do not mean that cosmic incommensurabilities between Western and indigenous topologies of climate change were neutralized by the Paruku Project. Many challenges remained. John Carty and Kim Mahood tell the instructive story of Walmajarri custodians approaching archaeologists during the Paruku Project with a question about some bones they had found; they believed them human, evidence of traditional stories of tribal conflict, and they wanted scientific confirmation. When the archaeologists excavated a horse tooth from among the bones, custodians held it up and declared it human to the community members present. Scientists immediately talked over the custodians, correcting them. A senior Walmajarri woman, Julianne Johns, turned to the scientists and said, "You're not listening." Carty and Mahood concluded of the exchange:

The archaeologists, who with considerable goodwill were trying to clear something up for people, failed to understand the set of Aboriginal narratives that was being brought to bear on this excavation, and that the role they were playing as researchers was not simply about revealing the scientific truth of those bones. It may have been a horse's tooth, but it was also a missed opportunity to open up a different order of truth. (Morton et al., 2013, p. 23)

As Carty and Mahood suggest, indigenous topologies of climate change cannot be reduced to Western scientific ones; sometimes these different topologies cannot even be reconciled. When those moments arise in cross-cultural collaboration, it is tempting for scientists to simply "talk over" them, which is just another form of cultural imperialism. Indeed, this tendency prematurely ended several collaborations between the Walmajarri and scientists prior to the Paruku Project (Morton et al., 2013, p. 22). But by opening up artistic channels as well as scientific ones, the Project was able to place "different order[s] of truth" beside each other, without reducing one to another, thus allowing the collaboration to continue to flow in spite

of cosmic incommensurabilities that arose sometimes.

A second challenge inheres in attempts to export collaborations like Paruku outside their rhetorical situations. It may be tempting to “borrow” from Paruku a few indigenous techniques for our Western toolkits and argue we have thus altered our topologies of climate. But this is merely another face of cultural imperialism (Wang, 2013, p. 230, p. 240). Rhetoricians of climate could, for instance, borrow the trope of “concentricity” from AAAP and use it to explain the viral appeal of the animated rose diagram of global warming circulated by the British National Center for Atmospheric Research last year (Figure 5); we could suggest that the graphic had such wide appeal because, unlike the “hockey stick,” its concentricity yields a dwelling place for the viewer’s eye and anxieties, just as circles and spirals in AAAP mark “sitting down places.” But concentricity doesn’t necessarily signify within a topology of dwelling for Western viewers. And if we borrow Aboriginal tropes to analyze Western climate graphics, we need to acknowledge that these graphics are implicated in the subjugation of Aboriginal Australians (Frenkel, 1994; Peet, 1985). In this context, the rose diagram forms not a dwelling place but rather a synoptic erasure of Aboriginal attempts to steward their local climate—we’re simply engaging in another form of orientalism (Mao, 2003, p. 409).

What I am suggesting is that if we want to truly alter the synoptic discourse of global climate, to seek other topologies for articulating Western science with local agency, there are no bandaid fixes. To truly “Other” our climate topologies will be truly difficult: we must, as the Paruku Project models for us, collaborate with vulnerable communities in accountable ways to create hybrid results serving community interests (Walsh, 2012). We must let incommensurable topologies of climate stand irreducible, untranslatable, substantially unknowable. And we must accept that the way we’re used to thinking and talking about climate will be permanently altered via this articulation.

This reciprocal process is familiar to Aboriginal Australians, who call it “two-way.” Two-way describes the ways in which Aboriginal Australians have worked with and against *kartiya*, including the intentional sharing and sale of artworks in order to create mutual understanding and to strengthen the priority of their claims to land and resources (McLean, 2015). Two-way describes a collaboration that leaves neither party intact. Two-way yields hybrids, meaning that after the Paruku Project, the Walmajarri see the lake differently through

their Cybertracker devices; and for the archaeologists, horse teeth now blur rather than clarify the line between humans and nonhumans.

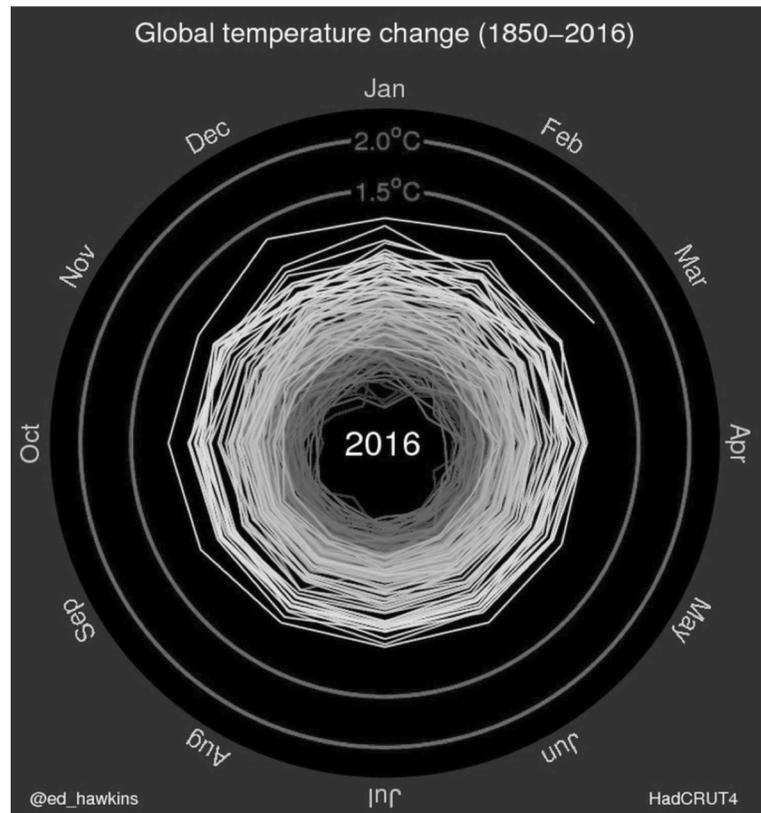


Figure 5: “Global Temperature Change 1850–2016,” Ed Hawkins, National Center for Atmospheric Research, Reading University (<http://blogs.reading.ac.uk/climate-lab-book/files/2016/05/spiral2016.png>)

If we embrace two-way, if collaborations like the Paruku Project are to become the norm rather than the exception for the way we interact with climate-vulnerable communities, rhetoricians of science must question our long, tacit acceptance of the cultural and epistemological supremacy of Western science. We must turn our skills at tracing topologies to help climate scientists—and ourselves—see that there is not just one global climate but many local climates. Comparative rhetoricians arrived at these principles of decentering and multiplying some time ago (Mao, 2003; Stroud, 2009; Wang, 2013), but

they are largely foreign to rhetoricians of science, who have worked in and on Western concepts with few exceptions (notable among these Zhang's (2016) work on the visual rhetoric of classical Chinese medicine). Practically speaking, changing the topology of our practice would involve some or all of the following:

- Finding ways to visualize climate that begin from local knowledge and work outward rather than beginning with global data and “downscaling” to the local level.
- Instead of, or on par with, traditional synoptic methods such as corpus work and surveys, engaging situated methodologies in the study of climate rhetorics (e.g., ethnography, action research, Actor-Network analysis, and other participant-observer methods).
- Helping to bring climate scientists and vulnerable communities into true dialogue (where dissensus is respected and productive) instead of dialectic (where synthetic consensus tends to pare off the values and perspectives of the politically weaker partner) (Kock, 2007; Kraus, 2007).
- Adopting boundary objects or other ontological approaches to help stakeholders work around incommensurabilities between scientific and local perspectives on climate (Graham & Herndl, 2013).
- In our articles and books, fighting the dialectic urge to synthesize scientific and local accounts of climate, particularly when writing about vulnerable and/or non-Western communities.
- Employing rhetorics of listening (Ratcliffe, 2005).

The benefits of folding topologies of climate in these ways are themselves manifold—greater trust between vulnerable communities and scientists; greater local agency in mitigating and adapting to climate change; a richer understanding for climate scientists of their object of study (after all, the Walmajarri people have been accounting for climate change for 50,000 years or more, while Western science has recorded it for only about 150 years). But what about the risks? After all, prominent science-studies scholars have recently spoken against the decentering of scientific epistemologies (cf. Ceccarelli, 2013a; Latour, 2004; Oreskes, 2010; Paroske, 2009). They point to the U.S. context as a cautionary tale of how powerful corporate interests can insert themselves into the vacuum created by the deauthorization of scientific authority, to the special detriment of

vulnerable communities. Won't calls to decentralize science in climate debates merely exacerbate this dynamic?

A few points: first, within the types of climate-vulnerable communities I have been discussing—the Walmajarri, fishermen in Bangladesh, Cajuns in Louisiana, or the Inuit in Canada—people don't need a scientist to tell them that the climate is changing; they have “seen it with [their] own eyes” (Rudiak-Gould, 2013). The question for rhetoricians working in these communities thus is not how to instill a narrative of anthropogenic climate change, but rather how best to leverage resources to assist local climate adaptation and resilience efforts.

Second, I am not in any context advocating throwing out synoptic scientific views of climate. Rather, I am advocating articulating them with local views of climate in a way that respects both value systems and meets goals for both communities.

Finally, I believe the situation that science-studies scholars are criticizing in the U.S.—where transnational corporations effectively control the discourse on climate change—is in part and in fact a direct result of synoptic topologies of climate. To revisit Haraway's argument, once the “god trick” was accomplished in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, then only those who could occupy the god's-eye position could govern the climate. Following the World Wars, this position was occupied by American-military-industrial-funded Big Science projects, specifically the satellite surveillance program. With the collapse of Big-Science funding at the end of the Cold War, the god's-eye position in the synoptic structure opened up a bit, but only to actors with similarly global reach and resources. Enter transnational corporations—including Google and some of the same energy companies who funded the climate “manufactroversy” in the U.S. (Gurevitch, 2014; Germain et al., 2016).

And when god-actors control the topology of climate discourse, you get god-like climatic interventions (Gurevitch, 2014, p. 100)—such as a proposal to inject two million metric tons of calcite into the stratosphere to reflect sunlight (Keith et al., 2016); or the permanent relocation of Indonesian indigenous coastal communities to housing projects so that the mangrove swamps they have cultivated for generations to stabilize the coastline can be ripped out and replaced with a \$40 billion-dollar seawall built in the shape of an eagle (as seen from space, naturally) by a consortium of transnational engineering firms (Sherwell, 2016).

Most of us are at least suspicious of these “solutions”; nevertheless, they are the natural fruit of a synoptic topology of climate. Trying to alter them without altering the generative topology is ineffectual and ironic. You end up like former NASA climate scientist James Hansen, writing a book chiding average Americans for failing to take action on climate change after having argued for years that they weren’t qualified to understand or assess it for themselves.<sup>4</sup> If we want to alter this ironic and imperialist climatic-rhetorical cycle, we need to find ways to empower vulnerable communities to assemble robust local views of climate and articulate—rather than subject—them to scientific views in ways that meet local goals. We need to be willing to fold the global into the local, and science into ethics—as AAAP artists have done through *Country and Law*—if we truly want to change the rhetorical climate around climate change.

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### Notes

<sup>1</sup> *Topoi* are strategic stances from which to generate arguments on a subject. Aristotle identified at least three kinds: universal or common *topoi* like compare/contrast and cause/effect that can be used to generate arguments on any subject; *endoxa* or shared values that can provide starting points for arguments within a community; and *idia* or special topics unique to certain technical discourses like law, tax policy, or physics. “Beliefs, values, and norms,” as a shorthand for this range, suggests two important points about *topoi*: they are communal property, expressing the persistent, characteristic attitude of a discourse community toward a particular issue; at the same time, they are always in tension with *kairos*, or the radical contingency of rhetorical situations, meaning that the configuration of a community’s dominant *topoi* can and does shift over time. There is a voluminous literature on *topoi*, as they are the fundamental technique of Classical rhetoric. Readers wanting more detail should consult the glossary of Walsh and Boyle (2017), as well as (Leff, 1983).

<sup>2</sup> From the chapter on Aboriginal Australian rhetoric in *Comparative Rhetoric*: “Some features of discourse observed among them resemble rhetorical practices of early human beings suggested in the previous chapter, whether

these are survivals from ancient times or the result of living in conditions more analogous to ancient times than found elsewhere in the world. It is perhaps relevant that the animals of Australia—for example, the platypus and the echidna—include survivals from earlier stages of evolution” (Kennedy, 1998, p. 47).

<sup>3</sup>The original formulation: “It is the common humanity that creates the possibility of anthropology; it is the diversity of humanity that makes it necessary” (Morphy, 2007, p. 7).

<sup>4</sup>Hansen told a reporter in 1991: “You can’t stick your head out the window to look for the greenhouse effect unless you’re clever enough to compare the climate to what it was a few decades ago” (Wright, 1991). Seven years ago, he published a trade polemic called *Storms of my Grandchildren: The Truth about the Coming Climate Catastrophe and Our Last Chance to Save Humanity* (Hansen, 2010).

## References

- Bardon, G., & Bardon, J. (2004). *Papunya: A Place Made After the Story; the Beginnings of the Western Desert Painting Movement*. Victoria, AUS: Miegunyah Press.
- Bitzer, L. F. (1968). The Rhetorical Situation. *Philosophy and Rhetoric*, 1, 1–14.
- Carty, J. (2011). *Creating Country: Abstraction, Economics and the Social Life of Style in Balgo Art*. PhD, Anthropology, Australian National University.
- Ceccarelli, L. (2013a). Controversy over manufactured scientific controversy: A rejoinder to Fuller. *Rhetoric & Public Affairs*, 16(4), 761–766.
- Ceccarelli, L. (2013b). *On the frontier of science: An American rhetoric of exploration and exploitation*. East Lansing, MI: MSU Press.
- Foucault, M. (2007). *Territory, Security, Population: Lectures at the Collège de France, 1977–1978*. Translated by G. Burchell. New York: Palgrave Macmillan.
- Fox, W. L. (2015). Painting Stories, Reading Country. In H. F. Skerritt (Ed.), *No Boundaries: Australian Aboriginal Contemporary Abstract Painting from the Debra and Dennis Scholl Collection* (pp.19–21). New York: Nevada Museum of Art/DelMonico Books.
- Frenkel, S. (1994). Old Theories in New Places? Environmental Determinism and Bioregionalism\*. *The Professional Geographer*, 46(3), 289–295. doi: 10.1111/j.0033-0124.1994.00289.x.
- Germain, S., Durak, B., McKeever, J., Latendresse, V., Grant, C., & Sloan, J. J. (2016). Global Monitoring of Greenhouse Gas Emissions. Technical Session III: Year in Review. <http://digitalcommons.usu.edu/smallsat/2016/TS3YearInReview/10/>.
- Graham, S. S., & Herndl, C. (2013). Multiple ontologies in pain management: Toward a postplural rhetoric of science. *Technical Communication Quarterly*, 22(2), 103–125.

- Gurevitch, L. (2014). Google Warming: Google Earth as eco-machinima. *Convergence: The International Journal of Research into New Media Technologies*, 20(1), 85–107.
- Hansen, J. (2010). *Storms of my grandchildren: the truth about the coming climate catastrophe and our last chance to save humanity*. New York: Bloomsbury Publishing USA.
- Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies*, 14(3), 575–599.
- Haraway, D. J. (1997). *Modest\_Witness@Second\_Millennium.FemaleMan(c)\_Meets\_OncoMouseTM: Feminism and Technoscience*. New York: Routledge.
- Harris, R. A. (2005). *Rhetoric and Incommensurability*. Anderson, SC: Parlor Press.
- Hulme, M. (2011). Reducing the future to climate: a story of climate determinism and reductionism. *Osiris*, 26(1), 245–266.
- Ingold, T. (1993). Globes and spheres: The topology of environmentalism. In K. Milton (Ed.), *Environmentalism: The view from anthropology* (pp. 31–42). London: Routledge.
- Keith, D. W., Weisenstein, D. K., Dykema, J. A., & Keutsch, F. N. (2016). Stratospheric solar geoengineering without ozone loss. *Proceedings of the National Academy of Sciences*, 113(52), 14910–14914. doi: 10.1073/pnas.1615572113.
- Kennedy, G. (1998). *Comparative Rhetoric*. New York: Oxford.
- Kock, C. (2007). Norms of legitimate dissensus. *Informal Logic*, 27(2), 179–196.
- Kraus, M. (2007). Early Greek probability arguments and common ground in dissensus.
- Latour, B. (2004). Why has critique run out of steam? From matters of fact to matters of concern. *Critical Inquiry*, 30(2), 225–248.
- Leff, M. (1983). The Topics of Argumentative Invention in Latin Rhetorical Theory from Cicero to Boethius. *Rhetorica*, 1, 23–44.
- Mao, L. (2003). Reflective encounters: Illustrating comparative rhetoric. *Style*, 37(4), 401–424.
- McLean, I. (2015). Paddy Bedford of Jirrawun: Two-Way Street. In H. F. Skerritt (Ed.), *No Boundaries: Australian Aboriginal Contemporary Abstract Painting from the Debra and Dennis Scholl Collection* (pp. 32–38). New York: Nevada Museum of Art/DelMonico Books.
- Morphy, H. (1998). *Aboriginal Art*. London: Phaidon Press.
- Morphy, H. (2007). *Becoming Art: Exploring Cross-Cultural Categories*. New York: Berg.
- Morton, S., Martin, M., Mahood, K., & Carty, J. (Eds.). (2013). *Desert Lake: Art, Science and Stories from Paruku*. Collingwood, AUS: CSIRO.
- Oreskes, N., & Conway, E. M. (2010). *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury Press.

- Paroske, M. (2009). Deliberating Interantional Science Policy Controversies: Uncertainty and AIDS in South Africa. *Quarterly Journal of Speech*, 95(2):148–170.
- Peet, R. (1985). The Social Origins of Environmental Determinism. *Annals of the Association of American Geographers*, 75(3), 309–333. doi: 10.1111/j.1467-8306.1985.tb00069.x.
- Ratcliffe, K. (2005). *Rhetorical listening: Identification, gender, whiteness*. Carbondale, IL: SIU Press.
- Rose, D. B. (1997). Common property regimes in Aboriginal Australia: totemism revisited. *The governance of common property in the Pacific region*, 19, 1127.
- Rudiak-Gould, P. (2013). “We have seen it with our own eyes”: Why we disagree about climate change visibility. *Weather, Climate, and Society*, 5(2), 120–132.
- Schneider, B., & Nocke, T. (2014). *Image Politics of Climate Change: Visualizations, Imaginations, Documentations*. Bielefeld, Germany: Transcript Verlag.
- Sherwell, P. (2016, Nov. 22). \$40bn to save Jakarta: the story of the Great Garuda. <https://www.theguardian.com/cities/2016/nov/22/jakarta-great-garuda-seawall-sinking>.
- Stroud, S. R. (2009). Pragmatism and the Methodology of Comparative Rhetoric. *Rhetoric Society Quarterly*, 39 (4), 353–379.
- TallBear, K. (2013). Genomic articulations of indigeneity. *Social Studies of Science*, 43(4), 509–533. doi:10.1177/0306312713483893.
- Todd, Z. (2014, October 24). An Indigenous Feminist’s take on the Ontological Turn: ‘ontology’ is just another word for colonialism. *Urbane Adventurer: Amiskwaci*, May 31.
- Walsh, L. (2012). Accountability: Towards a Definition of Hybridity for Scholars of Transnational Rhetorics. *Rhetorica: A Journal of the History of Rhetoric*, 30(4), 392–431.
- Walsh, L. & Boyle, C. (2017). *Topologies as Techniques for a Post-Critical Rhetoric*. New York: Palgrave Macmillan.
- Walsh, L. & Prelli, L. J. (2017). Getting Down in the Weeds to Get a God’s-Eye View: The Synoptic Topology of Early American Ecology. In L. Walsh & C. Boyle (Eds.), *Topologies as Techniques for a Post-Critical Rhetoric* (pp. 197–218). New York: Palgrave Macmillan.
- Wang, B. (2013). Comparative Rhetoric, Postcolonial Studies, and Transnational Feminisms: A Geopolitical Approach. *Rhetoric Society Quarterly*, 43(3), 226–242. doi: 10.1080/02773945.2013.792692.
- Watson, C. (1996). *Kuruwarri, the Generative Force: Balgo Women’s Contemporary Paintings and Their Relationship to Traditional Media*. Australian National University.
- Wright, K. (1991, Feb. 3). Heating the Global Warming Debate. *New York Times Magazine*.
- Zhang, Y. (2016). Illustrating beauty and utility: Visual rhetoric in two medical texts written in China’s Northern Song Dynasty, 960–1127. *Journal of Technical Writing and Communication*, 46(2), 172–205.