

## WestminsterResearch

http://www.westminster.ac.uk/westminsterresearch

The Weather is Always a Method Seetharama Bhat, H.

This is a pre-publication version of a book chapter to be published in Seetharama Bhat, H. 2021. The Weather is Always a Method. in: Chandler, D., Rothe, D. and Muller, F. (ed.) International Relations in the Anthropocene: New Agendas, New Agencies and New Approaches Switzerland Palgrave Macmillan. pp. 407-423.

The WestminsterResearch online digital archive at the University of Westminster aims to make the research output of the University available to a wider audience. Copyright and Moral Rights remain with the authors and/or copyright owners.

# The Weather is Always a Method

Harshavardhan Bhat

Cite as: Bhat, H. (forthcoming). The Weather is Always a Method. In "International Relations in the Anthropocene - New Agendas, New Agencies and New Approaches" edited by Chandler, D., Muller, F., and Rothe, D. London: Palgrave

#### Introduction

The title of this chapter is somewhat an obvious one. Life exists within the atmosphere and the material relations in and of the weather. Any relation within cosmologies of the international surely exist within this. Yet, as other chapters in this collection have displayed, the engagement with the Anthropocene is a form of methodological trouble for IR. Interrupting human-nature binaries and subject-object divides requires work. This chapter is a brief glimpse at some ways through which the weather can help us do that. Therefore, as an example of a possible methodological approach in/of the Anthropocene, this chapter focuses on the weather – not simply as an object of knowledge but as a material knowledge system in the making and unmaking of IR itself.

I use the word weather interchangeably with the air and the wind. The term weather linguistically simply offers a way of encapsulating an assemblage of materials and relations: air, wind, water, current, ground, dust, earth, muds and so much more. However, the term weather takes us to a particular imaginary of the assemblage that's informed by popular conversation and phenomena. Hence, the interchangeability is to remind us that our words are expressions for things deeply interlocked in powerful relationships that allow for the condition of our lifeworld. The air is weather just as much as the weather is the mud. For a chapter on IR in the Anthropocene, this piece is an attempt at helping readers think about ways through which weathers as methods inform IR in the Anthropocene and vice versa.

For example, the air and the wind are methods for boats to move and seeds to pollinate. The currents are also a method for the air to become wind. People try to make methods out of the weather. People map it, architecture within it, fold and create all sorts of possibilities in/with methods and methodologies that work with

the weather but are also within and because of this air. This chapter, inspired by contemporary readings, shows how the weather is always a method in international relations and its study. Even more so in the Anthropocene, where the material assemblages of weather carry and make transformation. For me contextually, this is the air of the monsoon which was the subject of my doctoral research and which finds brief moments of expression in this text.

There are three parts to this chapter. Each briefly introduces a narrative affixed to some of its contemporary literature and context. The attempt in each part is to show the reader different ways of how the weather is always a method. The first part, titled 'Wind', thinks with rice as a commodity of monsoonal spaces, bringing it in conversation with the spatio-temporalities of IR. The second part, titled 'Bodies', engages with Black Studies and scholarship that examines the lives and afterlives of transatlantic slavery and how some of that scholarship, embedded within IR, thinks of the weather. The third, titled 'Aerosols against meterology' is an invitation for speculation with the knowledge systems in/of airborne matters we have come to deeply know. It asks the reader to think about how they come to know the winds and how disruptions in those methods can perhaps be openings rather than boxes that restrict the ontological reading of the materials of the air. This, I propose is a unique and important moment for IR as it humbly asks for reconsideration, not simply for air's ontological capacity but because the stakes of writing violent methods with the wind and the weather are high, in a climate of breakdown, for peoples who breathe and live in air.

## Wind

At my grandmother's place in southern Karnataka, in the paddy field at the left of the house, they used to cultivate a local variety of rice. In the past five years, they've stopped because the monsoon has changed and they don't receive rainfall the way they used to in the past. The time, frequency and intensities of the air of the monsoon have changed thereby changing the relationship between the people of the house and the paddy field. A paddy field after all is a flooded patch of soil. If the air of the monsoon does not distribute the material of optimal floods, any

speculation of cultivation remains a fantasy. For monsoonal regions, water comes from the sky. The air is the method. These days, other vegetables are cultivated in that patch. The last time I asked my grandmother about rice - she had commented about the change in time and that the time of other places had come upon these lands. To discuss the Anthropocene is to always discuss a changing life-world, inundated by the work of more-than-humans and peoples. Peoples 'here' implicated in processes and materials, with people 'there'. That simultaneity of several relations in motion is what makes the methods of the air particularly complicated to understand. For international relations, the monsoon can be understood not just through what we think of as the weather but also the commodities, communities, systems, infrastructures, biomes - that exist and influence because of the monsoon. The reversal in the direction of the wind that carries the ocean into the sky is not simply a metaphoric analogy for what a monsoon is. It is quite literally the greatest accumulation of aqueous matter sustained in the air. It is a spatio-temporal motion that entangles in/with/becauseof everything that is stuck and nurtured in its formation. For the paddy field, any change in the spatio-temporality of the monsoon affects the stickiness of the biome - an exemplification of what we conceptualise as humidity or moisture - the affective force which nutures all the forms of life that gather in its air.

If we think of the air of the monsoon in alliance with rice, air not just allows one to understand the world rice needs in order for its grass to grow but it allows the speculative future of the forms and places rice can occupy. From the situatedness of the paddy field, to take the air seriously is to take into deep account the multiplicity of assemblages - informatic, speculative, infrastructural, technical, biomic and relational. The air of the monsoon presents us with a method of thinking-with conditions not as weather events but as the stickiest of entanglements that are interlocked with a variety of matters and times in conurturing condition. As Elaine Gan (2019) writes "Rice does not pre-exist its relations; what counts as rice (in its various modalities) arises when differential trajectories crisscross, forming unruly assemblages" (paragraph 1). Elaine Gan's work teaches us how rice comes into being as a force of matter - associations that conjoin in particular ways that cajole emergence. Thinking with feminist scholars such as Anna Tsing, Karen Barad and Donna Haraway, paying attention to more-

than-human entanglements, Gan's work helps me understand that rice, in/of the Anthropocene can assist us in reading disturbances, disruptions and interconnections. International relations despite the way it is often written, is always composed of them. Most importantly, rice - read as a grass attuned to monsoonal becomings - offers us the potential of entering a whole new category of political relations.

The Bengal Famine of the 1940s, exercised by colonial forces in Bengal, as a sustained act of extraction, theft and genocide, to deter the Japanese advance through Myanmar and defend British imperial interests, is one such example. Extractive processes are relationships with peoples and weathers. Mike Davis' (2000) work on Late Victorian Holocausts and Neeladri Bhattacharya's (2018) work on agrarian colonisation speaks to this relationship. The framing of the famine is the framing of the condition that colonial thinking seeks to perpetuate as process. In fact, the very concept of famine, displaces the labor of peoples and violent extraction onto the air. It conceptualizes the weather to have the agency of extractive suffering, thereby redefining the relationship between colonial praxis and agriculture. It also employs limited meteorological methodologies and speculations in designating oppression alongside so called phenomenological weather. Despite the condition of the air, the forceful fabrication of relationships of peoples with weathers is to shift relations and thereby the conceptualisation of possibilities. So, if you read the work of rice (considering the importance of rice in Bengal and the broader region) as an interlocutor for the weather, in our exploration of international relations, you then begin to see how the weather worlds possibilities of interconnection that normative modes of IR don't provide an understanding of.

Furthermore, the political assemblages, that make the weather world in certain anthropocentric ways, denote the production of knowledge practice of the weather - its air, water, grounds, life, and what they come to mean. For example, a common critique of thinking-with-materials in disciplines like IR tends to be the accusation that these approaches are environmentally deterministic. They aren't. IR's history in/with the globalisation of commodities and its fetishism with commodities attracts this critique. Furthermore, the point of thinking-withmaterials and weathers is not to write political studies where more-than-human

matters design human relations with a god-like agency but to lay stress upon how human matters are never detached from materialities, weathers and more-than-human others. They are constantly co-producing the world.

This approach, as also argued by feminist and multi-species scholarship, requires attention to how people are always making-with, because-of, in-the weather and its several ecologies. In the case of the Bengal famine, the monsoon becomes the site of extraction through which colonial fantasies are enacted. While I have used this example because of its historical immensity, it is important to note that these methodologies of extraction are always ongoing and IR is implicated as a fundamental methodological formation that treats the weather (in/with its peoples and matters) through these fantasies of the colonial lens.

Militarisation has always in modernity (and in our ongoing colonial time) played with the weather and has methodologically manipulated it. Today, the movement of the colonial military complex that plays a foundational role in the contemporary state of international relations is also a powerful formulator of weather. As recent reports indicate: "The US Department of Defense has a larger annual carbon footprint than most countries on earth. With a sprawling network of bases and logistics networks, the US military is the single biggest emitter of carbon dioxide in the world aside from whole nation-states themselves" (Hussain 2019, paragraph 6). Colonial methodologies of the weather and contemporary capitalism address the nurturing capacities of weathers as resources. To assign the materials of life-world substances, substantiations (Choy 2011), forms and formations as resources is a methodological act that is not detached from the implications of weathers past and weathers future. What is inherited as a resource - is always also a method of materiality. International relations can never be detached from that inheritance and the invention of the nation state is deeply affixed with methodological violence.

In the case of the paddy fields of Bengal and the famine enacted by political forces, rice is not simply the analytical material for consumption and re-pollination but is chemically imbricated within the materialities of ongoing flows. These flows are both materially tangible and integral to the work of time. As Gan (2018) reminds us "Every grain embodies the creativities and violences of significant others that

come in the forms and of companion species, landscapes, machines, and systems of measure, knowledge, and exchange" (2018: 87-88). The structures of relations are not just felt in the air but are materially present in making the composition of the future. IR methods to think with the wind, the air, the weather can begin with a simple grain of rice. Matter and people are never alone in a story that brings matters and peoples through a condition and material called the air. So much of the weather is inside this air, and hence even a grain of rice in/of the Anthropocene can expose us to how and why international relations can be understood differently.

Box 1: Clouds of industrial agriculture

Consider for example, the rice-wheat bi-cropping system in central and northern India. Accelerated by processes such as the green revolution from the 1960s and economic liberalisation policies in the 1990s, the developmentalist paradigm employed by the Indian state in disciplining the country's waterways has enabled the bi-cropping system to participate in the national and international economy. So have neoliberalisation and industrial agricultural policies in powerful countries influenced other countries in joining them in this process. Through the geological engineering of indogangetic landscapes and gradual industrialisation, soils are taught to be attuned to bi-cropping systems. In India, the use of the combined harvester which is a machine that integrates the three functions of reaping (to cut), threshing (separating) and winnowing (blowing to remove the chaff) (Kumar, Kumar and Joshi 2015) usually leaves behind stubble which farmers burn to clear and make way for the next cycle. Although legal measures have been placed against the practice, complex socio-political conditions have forced farmers to continue the practice of stubble burning. Each winter, northern India and cities such as Delhi choke in smoke because of meteorological conditions that keeps the smog closer to the surface. As the stubble grass of rice are converted to carbons and other compounds that become the air, they transform the condition of the region, the Himalayas, expanding and mixing

with other conditions in and of the world. If we follow Nicholas Shapiro's (2015) work on the chemosphere which shows how bodies consume particular chemicals through the air - toxic atmosphere, as he reminds us, is part of a "complex give-and-take" (2015: 372) relationship. As international economic markets increase demand for the commodity and as national systems deepen their investments into the labor of rice, relationships in/of the air unfold - in exposing us to political formations complicit in international relations.

## **Bodies**

Christina Sharpe, in her article titled 'The Weather' (2016) frames the weather as follows: "In what I am calling the weather, antiblackness is as pervasive as climate. The weather necessitates changeability and improvisation; it is the atmospheric condition of time and place; it produces new ecologies" (paragraph 9). Slavery, dispossession, racism and ongoing structural violence frames the current of antiblackness. In her reading of literature, history, scholarship, kinship, the human and more-than-human environment, antiblackness is not just a phenomenon but is history and practice written by colonialism on/with materials and the weather. Through Sharpe (2016), one can read whiteness, colonialism and empire as methods that navigate winds, oceans, and grounds in entrenching it with antiblackness, sustaining it as their political project.

Reading the 'wake' in Sharpe's (2016) work then is both metaphoric and literal, affective and material. Sharpe (2016) develops what she calls 'wake work' to understand, read, write and make sense of worlding with bodies in a world of antiblackness. As Sharpe (2016) in her closing note, following Brand, underlines, there is both disaster and possibility in this weather. The work that the 'work' needs to do is draw out, flesh, annotate, redact, imagine, dream, perform the work of possibility in that weather. The currents of transatlantic slavery, its inheritance and ongoing logics, that Sharpe (2016) refers to, expand the normative reading of the weather as a manipulated meteorological site in/of the Anthropocene. It shows how colonial logics account significantly in the deep manipulation of life-worlds. The ecologies that she speaks of are ecologies in/of colonialism and empire, that

are foundational principles in the work of cultivating ecologies of death and intergenerational suffering. Transatlantic slavery, colonialism and the framing of the nation state, are living concepts and living weathers in/of contemporary conditions. International Relations as a discipline therefore is an inheritance of racist, colonial history. The reason I invoke Sharpe's work here is to remind us that bodies are entangled in the past, now and the future of methods and methodologies. The currents of air and water as logics drawn for the theoretical life of borders and the forcible displacement of bodies is work within the weather: and therefore it changes the world. Sharpe's proposal for 'wake work' is a method of possibility, a method for a conversation with other possible worlds - despite climates that are framed and theorised in other ways.

The plantation is an example of that site of the weather. Plantations as microclimates of homogeneous extractivist monocrop projects are global models of contemporary agriculture. As industrial agricultural systems collapse and deepen the precarity of soils and their farmers, one begins to see the connection between methodologies of internationalisation attuned with the method of breakdown. Climate breakdown therefore is a history of the Anthropocene, and the story of peoples and their methods in cultivating relationships with peoples and their lifeworlds. Astrida Neimanis and Jennifer Mae Hamilton (2018) - who are also inspired by Sharpe's work (her 2016 book In the Wake – On Blackness and Being) - think with it in the development of what they term as 'weathering': "In the face of the greatest climatic transformation that human bodies have ever known, weathering means learning to live with the changing conditions of rainfall, drought, heat, thaw and storm as never separable from the 'total climate' of social, political and cultural existence of bodies. This includes anti-blackness, but also, we suggest, coloniality, misogyny and the resourcing and thingafication of other bodies—poor, queer, non-human, disabled." (2018: 82).

Hamilton and Neimanis (2018), in their pedagogical work on weathering develop a field guide to think about the weather "through our bodies" (2018: 1) inviting readers to consider that the weather is always embodied, submerged, in/of/with bodies. Their work on the weather enables the work of 'method' to not just be

performed from the analytic figure of what we consider as 'data' but centres the weather in/of itself, that cuts across architectures, atmospheres, ocean and wind as methods that are always understood with and through bodies. For a student of IR in the Anthropocene, such "tactics" (Hamilton and Neimanis, 2018) can be valuable starting points in trying to understand the architecture and infrastructures, locally around oneself and internationally that cohabit what one thinks of as the weather. International relations after all is a human centric affair that has historically been built on/for the fantasies of colonial ordering. To begin a process of pedagogical awareness of context, situation, implication, entanglement, atmosphere and system is always an opportunity to more-than-reflect: to identify how methods of breakdown, cultivation and living are always in collaboration with the air. We are unable to think without it. We don't exist without it. The weather cannot be written off as a meteorological phenomena but is a material, implicated in much if not everything. Methods in international relations claiming power relations, structures and intentions of change - are also methods of changing the air and the world around us. Therefore, it is important to read them with care (Bellacasa 2017).

Following the scholarship of Édouard Glissant (1997), Sylvia Wynter (2003), Saidiya Hartman (2006), Katherine McKittrick (2013) and Tiffany Lethabo King (2019) I've been inspired by how a pedagogical, methodological, embedded, story of air's flow, current, time and matters can be read and understood differently. Who writes the air? How do they write the weather? Glissant, Wynter, Hartman, McKittrick and King, in my limited list, are all scholars of politics. They are researchers, poets, writers, storytellers but to me, they are also in their work reading international relations from a perspective that is key to confront and engage the mess of how whiteness addresses and produces IR. Methods matter and it matters where a reading of the weather begins. Which bodies and what people tell you what and why about the weather - are important questions for consideration. Climate breakdown after-all is not a method of equality. The process impacts some more than others and the disaster is written into the methodology of breakdown.

From the above scholars, for instance, one can read how particular methods of understanding winds and ocean currents have played a role in transatlantic slavery,

the time of the plantation, the contemporary nation state, blackness and its kinships. Reading the weather as and through colonial technologies and knowledge systems deepens the potential of intergenerational breakdown. But, so does it frame international relations - it frames contemporary notions of concepts like the 'United States', it exposes us to the entanglements that formalise violence and infrastructure, it cultivates a methodology of how one version of the world can exist. As Sharpe (2016) reminds us:

Slavery is the ghost in the machine of kinship. Kinship relations structure the nation. Capitulation to their current configurations is the continued enfleshment of that ghost. Refuse reconciliation to ongoing brutality. Refuse to feast on the corpse of others. Rend the fabric of the kinship narrative. Imagine otherwise. Remake the world. Some of us have never had any other choice. (2016: 12)

If we acknowledge the kinship of international relations with colonial history and colonial knowledge, then we also begin to acknowledge that colonial knowledge seeks flourishing through death work (Bird Rose, 2011). The term 'death work' that I get from Deborah Bird Rose in my reading is not a simple binary understanding of life and death but is a term that helps us think about the trajectory and interconnections that gather the assemblage of deaths. The assemblages of air, water, ground - as the weather - becomes the primary site of both extraction and death distribution. Climate breakdown and mass extinctions therefore are implicated in the colonial method of the weather. The colonial method of practicing their/its work with the currents of the wind and the ocean, relies on the hope of climate breakdown for the 'others' that it does not consider as human, living, interconnected and worthy of the earth. If you choose to think with scholarship that writes the history of international relations through colonialism, conquest, genocide, ecocide and its vast relations: you begin to see how international relations is, in fact, a discipline in and of the Anthropocene. A very particular treatment of the weather - the assemblages of life-worlds - enables for IR to exist in a world that presents itself to be theorised by the apparatus of IR. Therefore, for a student of IR, where can a study of the weather as a method begin? In Box 2, I provide an example.

#### Box 2: Monuments

The American artist Kara Walker was commissioned for the Tate 2019-2020 Turbine Hall installation. Her piece, a large live fountain titled Fons Americanus taking inspiration from the iconic Victoria Memorial in front of Buckingham Palace is not a celebration of empire and colonisation unlike the latter. Walker describes it as a piece about the Atlantic ocean and global waters that have connected continents in the project of colonial prosperity and worldly plunder. Juxtaposed with the Victoria Memorial which celebrates the idea of victory and progress, Walker's piece - remaining true to her art and deep political relations, asks us to "regard the immaterial void of the abyss" in a "delightful family friendly setting" (Walker, 2019) - invokes slavery, quietly, loudly, saliently – in the affective state of a presence of knowledge and matter, situated and implicated with this time. I stood in front of the installation for quite some time and I remember reading the poetics of the poster on the wall by the piece, in some wonder and pain. An excerpt from the piece is as follows:

"Witness

the

**FONS AMERICANUS** 

THE DAUGHTERS OF WATERS

An Allegorical Wonder

Behold! The Sworling Drama

Of the Mercliness Seas, Routes and Rivers,

upon which our dark fortunes were traded

and on whose frothy shores

lay prostrate Captain, Slave and Starfish, alike," (Walker, 2019)

While there is no image of the work on these pages, I invite the reader to visit the piece online (Search for Kara Walker: Fons Americanus), to think about the site of finding method. Through what confrontations can new methods be developed? How are we implicated in the methods we use? What forms of inheritance ask us to use what methods and why? A comparison of the Victoria Memorial with Fons Americanus shows two different versions of history, the future and an imagination of the weather. How is the weather writing the possibility of methods? Like the part of Walker's work featuring a shell, an oyster like sculpture of a boy drowning in the ocean - who and what is made to drown in the methods of inheritance and continuity?

## Aerosols against meteorology

Thinking with aerosols (i.e. fine matter in/of the air) enables unique political ways of perceiving, writing and telling about the weather. Aerosols confront modernist and colonial approaches to climate change by disrupting techno-scientific projections of developmentalist futures. They also help demonstrate entanglements and assist in understanding some of the dangers in notions of containment, securitization, economisation and colonisation that modern IR allows for. The weather here is a story told with aerosols and the conceptual possibilities that therefore provides. United Nations Intergovernmental Panel on Climate Change (IPCC) documentation for instance sheds light on the challenges aerosols i.e. the matter in/of air – poses to science: "Clouds and aerosols continue to contribute the largest uncertainty to estimates and interpretations of the Earth's changing energy budget" (Boucher et al, 2018). Clouds and aerosols are very hard if not impossible to capture through mathematical formula and contemporary computation systems. Different particulates do different things to different flows and thereby are at dynamic odds with measurement, as clouds constantly form into future forms, of themselves, distributed, and becoming. Scientists are finding out new things about clouds every day.

For example, Kimberly Prather's group at the Scripps Institution of Oceanography has been demonstrating that sea spray and the composition of sea spray affects clouds, their formation and behavior (DeMott et al, 2016). Dust storm aerosols confront governmental notions of meteorological infrastructure (Zee 2017).

Clouds are known to complicate climate models and they're also one of the biggest reasons why forecasts are inaccurate in many monsoonal parts of the world: their deep relationship with geologic, oceanic, more-than-organic and lively matters tend to complicate scientific and aesthetic interests that tend to a modernist approach. Supraba Seshan, an ecologist and a biodiversity caretaker in the Western Ghats in southern India, has been publishing field notes vocalising a perspective that the elimination of our forests could impact the monsoon as we know it. Antonio Donato Nobre (2014) in the Future Climate of Amazonia Report speaks of how the forest orchestrates the waters of the air and its role in hydrating the atmosphere. Aerosols become clouds and clouds are composed of aerosols matter borne in the air but also entangled with other forms, processes, grounds and waters. Therefore, the section title 'aerosols against meteorology' is also an experiment posed as a material question or provocation that takes us beyond the confines of the modernised zone of containment.

Meteorology as we also understand from Davis (2000), Amrith (2018), Coen (2018) and Yusoff (2018), is a deeply political practice. In the Indian subcontinent, we see the development of the discipline of meteorology, thanks to empire's interest in planning value extraction from farmers and economic markets. It evolves as a visual imagining of the flows that contain India and frame India in relation to a world (Amrith 2018). As a mapping practice, it can also be understood as a knowledge system to cultivate capacities of productive value extraction from land, people and markets (Davis, 2000). Considering, meteorology's inheritance of its foundational methods from geology, we can also learn from Kathryn Yusoff's (2018) critical work on the Anthropocene, where she argues that: "As the Anthropocene proclaims the language of species life—anthropos—through a universalist geologic commons, it neatly erases histories of racism that were incubated through the regulatory structure of geologic relations." Following Yusoff (2018), who reads geology as a practice invested in the erasure and manipulation of racialised life, the relations that it nurtures into the future carry the force of those matters in times to come.

The historian, Deborah Coen (2018) addresses meteorology in the context of the Habsburg Empire as a practice that develops through climatology in the interest of seeking a methodology of unity across the Empire's vast geographical scale.

Speculatively mapping this trajectory onto the present, atmospheric science and meteorology in a whole range of scientific disciplines form the assemblages of how many of us are taught to understand the planetary. However, taking this context into situated analysis might open up different ways of realising how imaginaries of nations are entangled with imaginaries of the weather. The material apparatus that forms the planetary on the ground below, in our oceans, airs and in orbit - feeds back into the methodological computational and visual infrastructure that some call the technosphere (HKW, 2015). From the sciences of unity and planetary-wide extraction to contemporary advancements in natural science: the ability to deeply map and theorize into the geos, cosmos and biomes is expanded. IR is realised through this but it is also broken down because of its capacity to break down life-worlds. The weather is always a method because even in the wake of contemporary global climate breakdown, the response of many powerful countries is to further geo-engineer in a weather system that we still, despite the infrastructure, don't understand very well.

The monsoon is a good example. Monsoonal variability, timeframes, densities, causation, disruptions are all aspects that are entangled with the planetary but have very specific impacts on specific levels. The fantasy of geoengineering, for example, carries on the legacy of the fantasy of colonial assertion and manipulation of the weather. The Solar Geoengineering Research Programme at Harvard University defines geoengineering as "a set of emerging technologies that could manipulate the environment and partially offset some of the impacts of climate change" (Harvard's Solar Geoengineering Research Programme website 2020: https://geoengineering.environment.harvard.edu/home). Their work explores the use of a variety of aerosols in different formations and spatiotemporal atmospheric contexts that speculatively intend on assisting against global warming. However, the reason I invoked the aerosol through commentary in the opening of this section is because I think the aerosol is an interesting ontological material to think with, in the context of IR and the Anthropocene.

The aerosol worlds the possibility of a knowledge that is more-than-human because, despite colonial fantasies of rupture and control, aerosols leak, seep, move, premise, background, storm and exist as the air. Aerosols make, change, become and situate the condition that we call the air. For a student of

international relations interested in changing climates - our airs, waters, earths, life-worlds - aerosols are moments into methods that are always there for us to understand a lesson in ontological humility, entanglement and the work that goes into what keeps things together. It can also be a theoretical connection between the forms of neoliberal/capitalist/fascist anthropocenic conditions that entangle the burning earth. Most importantly, aerosols show us that the weather is always a method. Aerosols connect and interconnect. They are matter, understanding matter is political. Its ontological force has political agency and our bodies and knowledge systems are entangled with it, in many ways.

## Box 3: Cloud seeding

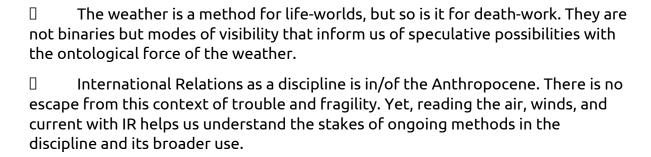
In the context of the winter smog in Delhi, the government has in the past few years (2017 – 2019) attempted to cloud seed to produce rain over the region to reduce atmospheric toxicity. In each of these years, the government has failed because the winter smog of Delhi is a dense aerosol cloud that is submerged into the city (Lalwani 2018; Mohan 2019). Cloud seeding exercises require very particular cloud conditions up in the atmosphere for them to succeed. You need clouds to cloud seed. In recent years cloud seeding has become a regular exercise in several parts of the world from the United States, to Dubai to China for a variety of purposes from tourism to agriculture (Harper, 2017; The UAE Research Programme for Rain Enhancement Science, 2020; Guilford, 2013). Cloud seeding in monsoonal regions remains a challenge because of the unique conditions of the monsoon and its spatiotemporalities throughout the year. Uncertainties in the method of cloud seeding are experienced due to the politics of aerosols. Anthropogenic formations in the air are expensive, resource and labour intensive. The fantasy of exercising a transformative politics of technological rupture of clouds is only offered to us through the ontological capacities of the cloud. To conspire against clouds in a world where the method of the cloud is its own entangled enactment is a failed conversation between knowledge systems. Technologies are not thereby answers to the breakdown but signify a technics of breakdown - i.e. the question perhaps is not how to cloudseed but

what we learn about our desire and use of knowledge from the political assertion to cloudseed? I invoke this example not to simply exercise a failed conversation between science and politics but to ask if there are other ways of imagining the politics of clouds considering failed modernity which still refuses to imagine differently.

#### Conclusion

Through the three sections, I have attempted a brief reading of how the weather is always a method for studies in IR. The Anthropocene is a problematic and powerful time and space for this engagement because it is only in the breakdown that IR begins to confront the materials (past, present and future) that constitute its imaginary. The weather exposes the Anthropocene as a material of drastic history and transformative violence that is sustained by the dynamics of the material. The air inherits those matters. Through this lifeworld material of the weather, IR is revisited. With some help from winds, bodies and aerosols, read with contemporary literatures that flesh out the substantiation of those matters – I argue that the weather is not simply a phenomenological site detached from human and lively matters. The weather can be a way through which other imaginaries and methods can flourish. Let us attempt that possibility, despite its inherited warmth, radioactivity, toxicity and interspecies death. The air is here and will be here, despite.

# **Key Points**



Draft
-------

Methodological moments for thinking with the weather lie everywhere. The stories you choose to see, read, write, draw, think, breathe with are matters of project, condition and speculation. Write what matters to you and the community around you. We are just people, despite the grandiosity of the international.

## Questions

	What methods help you to think of the weather and why? What role should methods play in thinking an IR for the Anthropocene?
	What are some of the technologies being used today to understand what nk of as the weather? What are their histories?
far cai	If you draw a map of the materials you think of that constitute the air - how a those relations in the map be traced? How are concepts, places and forms tter and life connected to that air?
[] assem	Why should International Relations be concerned with the weather and its blages?
do yo	If the knowledge systems of the weather have let you down, where and how I find kinship with knowledge systems that help you breathe/exist in a ing weather?

## Further reading

Tsing, A. (2005) Friction: An Ethnography of Global Connection. Princeton: Princeton University Press

Da Cunha, D. (2019) The Invention of Rivers: Alexander's Eye and Ganga's Descent. Philadelphia: University of Pennsylvania Press

Coen, D. (2018) Climate in Motion: Science, Empire and the Problem of Scale. Chicago: University of Chicago Press

Ingersoll, K. A. (2016) Waves of Knowing: A Seascape Epistemology. Durham: Duke University Press

Taussig, M. (2018) Palma Africana. Chicago: University of Chicago Press

Neimanis, A. (2017). Bodies of Water: Posthumanist Feminist Phenomenology. Sydney: Bloomsbury

#### References

Amrith, S. (2018). Unruly Waters - How Mountain Rivers and Monsoons have Shaped South Asia's History. London: Allen Lane.

Barad, K. (2007). Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning. Durham: Duke University Press

Bhattacharya, N. (2018). The Great Agrarian Conquest: The Colonial Reshaping of a Rural World. New Delhi: Permanent Black.

Bird Rose, D. (2011). Wild Dog Dreaming - Love and Extinction. Charlottesville: University of Virginia Press.

Boucher, O., D. Randall, P. Artaxo, C. Bretherton, G. Feingold, P. Forster, V.-M. Kerminen, Y. Kondo, H. Liao, U. Lohmann, P. Rasch, S.K. Satheesh, S. Sherwood, B. Stevens and X.Y. Zhang. (2013). Clouds and Aerosols. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge: Cambridge University Press.

Choy, T. (2011). Ecologies of Comparison: An Ethnography of Endangerment in Hong Kong. Durham: Duke University Press

Coen, D.R. (2018). Climate in Motion - Science, Empire and the Problem of Scale. Chicago: University of Chicago Press.

Da Cunha, D. (2019). The Invention of Rivers: Alexander's Eye and Ganga's Descent. University of Pennsylvania Press.

Davis, M (2000) Late Victorian Holocausts: El Niño Famines and the Making of the Third World. London: Verso.

DeMott, Paul J., Thomas C. J. Hill, Christina S. McCluskey, Kimberly A. Prather, Douglas B. Collins, Ryan C. Sullivan, Matthew J. Ruppel, et al. (2016). Sea Spray Aerosol as a Unique Source of Ice Nucleating Particles. Proceedings of the National Academy of Sciences 113, no. 21.

Gan, E. (2018). Timing rice: an inquiry into more-than-human temporalities of the Anthropocene. New formations: a journal of culture/theory/politics, 92, 87-101. Available from https://www.muse.jhu.edu/article/689859.

Gan, E. (2019). Sorting Seeds into Racialised Futures and Pasts. Catalyst - feminism, theory, technoscience, Vol 5 No 2 (2019): Special Section on Plantarium: Human–Vegetal Ecologies

Glissant, E (1997) Poetics of Relation. Ann Arbor: University of Michigan Press

Guilford, G. (2013). China creates 55 billion tons of artificial rain a year and it plans to quintuple that. Quartz, October 22. Available from https://qz.com/138141/china-creates-55-billion-tons-of-artificial-rain-a-year-and-it-plans-to-quintuple-that/

Hamilton, J. M., and Neimanis, A. (2018) "A Field Guide for Weathering: Embodied Tactics for Collectives of Two or More Humans." The Goose, 17(1): article 45. Accessed at:, https://scholars.wlu.ca/thegoose/vol17/iss1/45.

Haraway, D. (2007). When Species Meet. Minneapolis: University of Minnesota Press.

Haraway, H, Noboru Ishikawa, Scott F. Gilbert, Kenneth Olwig, Anna L. Tsing & Nils Bubandt. (2016). Anthropologists Are Talking – About the Anthropocene. Ethnos, 81:3, 535-564.

Harper, K. (2017). Make It Rain: State Control of Atmosphere in Twentieth-Century America. Chicago: University of Chicago Press.

Hartman, S. (2008). Lose your Mother: A Journey Along the Atlantic Slave Route. New York: Farrar Straus Giroux.

HKW Technosphere Project. (2015 – 2019). Available from https://www.hkw.de/en/programm/projekte/2015/technosphere/technosphere.ph p. Hussain, M. (2019). War on the world: Industrialised Militaries are a bigger part of the climate change emergency than you know. The Intercept, September 15. Available from https://theintercept.com/2019/09/15/climate-change-us-military-war/.

Koch, A, Brierley, C., Maslin, M., Lewis, S. (2019). Earth system impacts of the European arrival and Great Dying in the Americas after 1492. Quaternary Science Reviews, Volume 207, Pages 13-36, ISSN 0277-3791, Available from https://doi.org/10.1016/j.quascirev.2018.12.004.

Kumar, P, Surender Kumar, and Laxmi Joshi. (2015). Socioeconomic and Environmental Implications of Agricultural Residue Burning. SpringerBriefs in Environmental Science. New Delhi: Springer.

Lalwani, V. (2018). Pollution check: Experts cast a dark cloud over Centre's plan for artificial rain in Delhi. Scroll, November 28. Available from https://scroll.in/article/903554/pollution-check-experts-cast-a-dark-cloud-over-centre-s-plans-of-artificial-rain-in-delhi.

King, T.L. (2019). The Black Shoals: Offshore Formations of Black and Native Studies. Durham: Duke University Press.

Lowe, Lisa. (2015). The Intimacies of Four Continents. Durham: Duke University Press.

Malm, A. (2017). The Progress of This Storm - Nature and Society in a Warming World. London: Verso.

McKittrick, K. (2013). Plantation Futures. Small Axe, 1 November; 17 (3 (42)): 1–15. doi: https://doi.org/10.1215/07990537-2378892.

Mohan, V. (2019). Artificial rain: IIT-Kanpur hopes plan takes wings. Times of India, October 31. Available from

https://timesofindia.indiatimes.com/city/delhi/artificial-rain-iit-k-hopes-plan-takes-wings/articleshow/71827899.cms.

Moore, J.W. (2016). Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism. Oakland: PM Press.

Neimanis, A. (2019). The Weather Underwater: Blackness, White Feminism, and the Breathless Sea. Australian Feminist Studies, Available from DOI: 10.1080/08164649.2019.1697178.

Neimanis, A. & Hamilton, J.M. (2018). Weathering. Feminist Review, 118: 80. Available from https://doi.org/10.1057/s41305-018-0097-8.

Nobre, AD. (2014). The Future Climate of Amazonia, Available from http://www.ccst.inpe.br/wp-content/uploads/2014/11/ The\_Future\_Climate\_of\_Amazonia\_Report.pdf.

Puig de la Bellacasa, M. (2017). Matters of Care: Speculative Ethics in More Than Human Worlds. Minneapolis: University of Minnesota Press.

Shapiro, N. (2015). Attuning to the Chemosphere: Domestic Formaldehyde, Bodily Reasoning, and the Chemical Sublime. Cultural Anthropology 30, no. 3, 368–93.

Sharpe, C. (2016). In the Wake: On Blackness and Being. Durham: Duke University Press.

Sharpe, C. (2016). Lose your kin. The New Inquiry, November 16 Available from https://thenewinquiry.com/lose-your-kin/.

Sylvia Wynter, "Novel and History, Plot and Plantation," Savacou 5 (1971): 95-102.

The UAE Research Programme for Rain Enhancement Science. (2020). Available from http://www.uaerep.ae/

Tsing, A. (2005). Friction: An Ethnography of Global Connection. Durham: Princeton University Press.

Tsing, A. (2015). The Mushroom at the End of the World - On the Possibility of Life in Capitalist Ruins. Princeton: Princeton University Press.

Walker, K (2020). Fons Americanus. Tate Modern, London

Wynter, S. (2003). Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation--An Argument. CR: The New Centennial Review, vol. 3 no. 3, p. 257-337.

Yusoff, K. (2018). A Billion Black Anthropocenes or None. Minneapolis: University of Minnesota Press

Zee, Jerry. (2017). Holding Patterns: Sand and Political Time at China's Desert Shores. Cultural Anthropology, 32 (2):215-41. Available in https://doi.org/10.14506/ca32.2.06.