Workshop

Climate & the Beginning of the Crisis Decades

Friday 30th August 2024

On the front cover of Rockefeller Foundation publication *RF Illustrated* August 1974

Hosted by

Centre for the History of Science, Technology and Medicine, University of Manchester

Contents

Maps and Links

Campus Map (interactive): https://www.manchester.ac.uk/discover/maps/interactive-map/

Campus Map (PDF): http://documents.manchester.ac.uk/display.aspx?DocID=6507

City Map (PDF): https://documents.manchester.ac.uk/display.aspx?DocID=6506

University Travel Information: https://www.manchester.ac.uk/discover/maps/

Getting Here

Train

We are located close to both Piccadilly main line station (about two and a half hours from London) and Oxford Road train station, with Victoria train station a little further away.

For details of timetables, tickets and other rail information, please ring National Rail Enquiries on 08457 48 49 50 (+44 (0) 20 7278 5240 from overseas) or visit:

National Rail Enquiries website

Please note that railways services are currently often affected by industrial action. Rail operators will usually provide replacement bus services in this event, but this is not guaranteed.

The Oxford Road link bus (number 147) runs from Piccadilly Rail Station across the campus stopping at 14 locations and finishing at Grafton Street. This service runs on weekdays between 7.15am and 6.45pm, at ten-minute intervals, and can be caught from the Fairfield Street entrance to Piccadilly Station.

A taxi from Piccadilly Station to the Oxford Road area of the campus will cost you about £7.50.

To get to the Oxford Road area of the campus, go down the station approach to Oxford Road and turn right. The campus is a 10- to 15-minute walk. Alternatively, buses stop outside the Palace Hotel.

Car

The multi-storey car parks at both Booth Street West and Charles Street offer paid public parking and are convenient and safe.

Free parking can be found on surrounding residential streets but this is unreliable.

Air

Manchester Airport is one of the largest and busiest in the country. It is located about 10 miles (16km) south of the city centre, about 30 minutes from the University.

The airport has a number of transport links to the city:

Train – The airport's two terminals are linked directly to the city centre by a fast, frequent 24-hour train link to both Piccadilly and Oxford Road stations.

Taxi – A taxi from the airport to the University will cost approximately £30.

Bus – Local buses also run to the Oxford Road and Sackville Street areas of the campus.

Most major airlines fly to and from Manchester. For more information, please visit the Manchester Airport website.

Coach

Megabus is generally the cheapest intercity transport option with coach services from Manchester to destinations throughout the UK plus some international services.

Megabus coaches drop off at Shudehill Interchange in Manchester city centre just north of the Arndale Centre. The no. 18 bus will then take you straight to the venue.

Bus

Oxford road is one of the busiest bus routes in Europe. The 147 links Manchester Piccadilly station with the University of Manchester. Details for services can be accessed via google maps. For live bus times, please visit the Transport for Greater Manchester website.

Useful Workshop Information

The workshop will take place in room 2.57 on the second floor of the Simon Building at the University of Manchester Oxford Road Campus. The building is wheelchair accessible.

This accessible toilet is located ahead on entering the building via the side entrance {the large glass doors surrounded by a blue copper façade}. There are also accessible toilets on floors 4, 5, and 6, the accessible toilet on floor 6 has a push pad automated door.

Gender-neutral toilets are located on the ground floor, opposite the side entrance on the left.

Registration

Please register for this event via the Eventbrite shared with you.

Catering

Drinks, snacks and lunch will be provided. There is a kitchen in the annexe to room 2.57 (including a microwave and a fridge) if you require use of kitchen facilities. Please let us know of any dietary requirements or allergies through the registration process. Please feel free to email us if your dietary requirements have changed.

Dinner

We are planning to make a reservation at a nearby restaurant to follow the workshop. All are welcome. Please indicate that you would like to attend via the registration form on Eventbrite.

Programme

Registration from 9am

Introduction, welcome by CHSTM Director Carsten Timmermann, housekeeping: 9:30am

Panel 1: Framings: 10:00am–11:40am (Chair: Robert Naylor)

Madison Renner, Erik Isberg, Eleanor Shaw, Pollyanna Rhee

Lunch: 11:40am–12:40pm

Panel 2: Institutions: 12:40pm–2:20pm (Chair: Elliot Honeybun-Arnolda)

Frank Gerits, Robert Naylor, Carolina Granado, Dania Achermann

Teabreak: 2:20pm–2:40pm

Panel 3: Energy: 2:40pm–4:20pm (Chair: Elliot Honeybun-Arnolda)

Andrew Seaton, Abosede Omowumi Babatunde, Leah Aronowsky, Richard Staley

Roundtable Discussion: 4:30pm–5pm

Finish: 5pm

Dinner (optional): 6pm onwards

Workshop Contacts and Team

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Campus Security: 0161 306 9966

All panels will be held in room 2.57 of the Simon Building.

Panel 1: Framings

1. **Madison Renner** (Harvard University, United States)

   From Crisis to Calculation: A New Explanation for Supposed Missteps in Early-1980s Climate Communication

Historians and other commentators on climate-change science and energy policy frequently depict the early 1980s as a period of lost opportunity: Despite an emerging expert consensus that continued reliance on fossil-fuel energy would generate unprecedented warming with undesirable consequences within a few decades (e.g., WMO 1979), the scientists best situated to alert the public and advise politicians effectively failed to present a compelling case for the urgency of acting on the greenhouse threat. Existing explanations for the supposed inadequacy of early-1980s climate communication in the American context oscillate between extremes of scientific naïveté (Howe 2014) and scientific savvy (Oreskes, Conway, and Shindell 2008), yet neither can tell the whole story. This paper offers a new explanation for early-1980s expert equivocation regarding the nature, timing, and severity of consequences expected from increasing atmospheric CO2. Drawing on previously untapped primary source material documenting closed-door discussions at the National Academy of Sciences, the American Association for the Advancement of Science, and the US Department of Energy, I argue that leading American climate scientists knowingly emphasized uncertainty over urgency in a conscious effort to correct perceived missteps in their messaging during the 1970s, when poorly framed warnings prompted 'premature social panics' that they feared had diluted their credibility. Far from underestimating the challenge of producing politically actionable information, these experts debated intensely over wording, timing, emphasis, imagery, and the interpretive flexibility of alternative potential characterizations of the 'CO2 problem'—including whether to call it a 'problem' (rather than a 'situation' or 'issue') at all. By showing how their considerable energies devoted to information management and gatekeeping shaped the concept of greenhouse global warming itself as it emerged and stabilized, I argue that lessons from the 1970s mattered not only for what the 1980s failed to achieve politically but also for the content of scientific concepts and imageries that endure today.

2. **Erik Isberg** (KTH Royal Institute of Technology, Sweden)

   Political Paleoclimatology: Oceanic Pasts and Modelled Futures in the CLIMAP project (1971-1982)

This paper seeks to consider the role of the paleoceanographic research project CLIMAP (Climate: Long range Investigation, Mapping, and Prediction) in the historiography of the "crisis decades" and the emergence of new climate knowledge infrastructures. By utilizing deep sea core data, CLIMAP aimed to provide temporal depth to the contemporary efforts of modelling planetary climate dynamics. Reconciling the temporalities of deep sea core drilling with the temporalities of the

emergent study of climate futures was, I explore in the paper, not a seamless process. Rather, the CLIMAP projects members struggled to fit their temporal sensibilities within the framework of climate modelling and continuously negotiated how paleoclimatological knowledge could fit in this context. In particular, I will discuss how emergent issues relating to energy use and neo-Malthusian fears of overpopulation came to shape how the geological and paleoclimatological temporalities entered political debates about planetary futures.

The paper aims to highlight the role of scientific production of time in the making of planetary-scale environmental knowledge. Even though deep sea cores are often described as "natural archives", the efforts to synchronize deep sea core data with climate modelling and economic forecasting points to the political and geographical contingencies of such processes. The case of CLIMAP, I argue, is an indicative example of how the fluctuating boundaries between geological, environmental and political temporalities were negotiated and standardized during a few formative years in the 1970s.

3. **Eleanor Shaw** (University of Manchester, England)

"If you could say a little about the implications in as dramatic terms as possible so much the better": 1970s Publishing and Hubert Lamb's Climate Change Narratives

During the 1970s British climatologist Hubert Lamb was in constant contact with journal and magazine editors, conference and event planners from organisations as diverse as the International Commission for the North-West Atlantic Fisheries, Antiquity, The Institution of Heating and Ventilating Engineers, Bird Study, and the Insurance Institution of London. Lamb's outreach beyond the world of climatology was part of a mission not only to secure the future of his work and the finances of his Climatic Research Unit at the University of East Anglia, but also to provide the insights of his record-based climatology to industry, for use in their forecasting work. This outreach work contributed to the popularizing of climate discourse during the decade, and introduced Lamb's ideas about climate to a sizeable audience. During this time when climate narratives did not yet command attention on their own, his message was crafted through interactions with editors to produce resonant messages about climate change and its potential effects for different audiences. Academic publishing at this time was undergoing a series of changes on its journey from sideline cottage industry before the 1950s transformed into the neoliberal profit maker of today. With the commercialisation of the industry, the proliferation of subject-specific journals, and the development of the formal peer review process, interventionist editors such as Ben Lewin at Cell and John Maddox at Nature, no longer saw themselves as mere disseminators of scientific research, but arbitrators of how science should be done. In this context, Lamb's interactions with different editorial parties reflect his understanding that journals and magazines were where the value of his work and methods would be determined. The process of editing Lamb's work to change, emphasise or present differently his findings can tell us a great deal about how the work of climate scientists was presented to find new audiences in a decade of crisis.

4. **Pollyanna Rhee** (University of Illinois Urbana-Champaign, United States)

Climate's New Conservatism: Sustainability for Growth in the 1970s

By the mid-1970s, environmental issues regarding natural resources, pollution, and the negative consequences of growth gained widespread attention among policy elites, critics, and business leaders. One individual who took notice was George Mitchell. An innovator in natural gas fracking and real estate developer, in 1975 Mitchell organized a conference in Houston, Texas called

"Alternatives to Growth." The attendees included politicians from around the world, authors of The *Limits to Growth*, and economists including E.F. Schumacher, and a number of publications followed the conference. Mitchell hoped that his work to build what he described as "a unique program in support of sustainability" would be his lasting legacy.

Part of this program in sustainability came through his real estate projects, most notably an upscale planned community called The Woodlands outside of Houston dedicated in 1974, purported to allow residents the benefits of urban life and natural surroundings simultaneously. Mitchell found a ready partner in landscape architect Ian McHarg who designed The Woodland's master plan using a method he described as "ecological determinism" to produce the "first city plan produced by ecological planning." McHarg argued that understanding the region's natural processes was a stark innovation in environmentally responsible land use. Examining Mitchell and McHarg through The Woodlands, as well as related figures such as Maurice Strong, highlights the development of ideas about a changing climate to questions about the primacy of economic growth and land use in the 1970s. Encouraging sustainability was a sound investment in so far as it supported continued development in both energy and real estate. Ultimately their perspective on sustainability planning for a changing environment privileged maintaining existing conditions through technical interventions, such as ecological determinism, rather than a transformative vision for the future.

Panel 2: Institutions

1. **Frank Gerits** (Utrecht University, Netherlands)

   From Modernization Theory to Eco-modernization Theory: How Loss and Damage Funding and Geoengineering arose from the Struggle for a New International Economic Order (1970s-1980s)

How did environmental concerns shape the diplomatic relations between the Global North and South? Increased awareness of environmental degradation, in the form of acid rain and ozone layer damage, gave rise to environmental regulations as well as international deliberations at conferences like the United Nations Conference on the Human Environment from 5 to 16 June in 1972 (Cook, 1990). The push for more environmental awareness coincides with the call by developing countries to establish a New International Economic Order (NIEO), a set of proposals put forward by developing countries to create a more equitable international economic system, giving rise to demands for fair trade and technology transfer. This paper argues the search of economic and ecological justice were viewed as joint struggles for development in the 1970s.

In the Global North, French, British and American officials repurposed the development discourse in the 1970s and 1980. Aid had to jumpstart development, but also had to combat environmental degradation and climate change. There was a return to the very programs that had caused environmental damage such as technical assistance schemes while figures like Barbara Ward, who had acted as adviser to World Bank director Robert McNamara and John F. Kennedy in the 1960s returned in 1971 with the establishment of an International Institute for Environment and Development that made the case for sustainable development.

In the Global South relentless industrialization and colonial exploitation were blamed for the dual crisis of underdevelopment and ecological destruction. At the UN conference on the human environment, India's leader Indira Gandhi contrasted the precolonial harmonious relations to nature

with the environmental destruction brought about by empire. She criticized the Global North's emphasis on overpopulation and instead pointed to the colonial drive for 'efficiency' as the main cause of environmental decay.

To capture these opposing views on environmental justice, this paper will look at the modernization programs that were deployed to mitigate environmental damage. What type of development aid did former empires, like France and the United Kingdom, as well as a postwar superpower, the United States, provide to restore the environment and jumpstart development? Conversely, how did local populations respond to the environmental development aid they received?

2. **Robert Naylor** (University of Manchester, England; University of Cambridge, England)

Climate and Conflict: The Rockefeller Foundation Support for the International Federation of Institutes for Advanced Study's Climate Change Research in the 1970s

Previous work on climate change in the 1970s has mostly ignored the role of private foundations in supporting research into climate change and its impacts. However, during this crucial time period, the Rockefeller Foundation (RF) played a part in funding climate change research both in the US and abroad, a role that is in need of further investigation.

Using material from the Rockefeller Archive Center, this presentation will focus on RF support for work done by the International Federation of Institutes for Advanced Study (IFIAS) between 1974–78. I argue that such support ultimately stemmed from the presidency of John H. Knowles, who led attempts to reform RF's image in response to challenges of the 1960s such as the 1969 Tax Reform Act. As a result, RF funded interdisciplinary conferences and publications that made explicit recommendations regarding food policy, sometimes causing tension with members of the US policy and research establishments. These grants underpinned substantial projects, such as those led by IFIAS, that pioneered socially-embedded, interdisciplinary research on climate change.

3. **Carolina Granado** (Autonomous University of Barcelona, Catalonia)

Early Steps in Climate Change Impact Assessments: Insights from the World Climate Conference, 1979

Understanding the impacts of climate change on both social and ecological systems was a crucial catalyst for igniting political awareness and action in the 1980s. However, little attention has been devoted to the origins of climate change impact assessments . This presentation will address this gap delving into the treatment of climate change impacts at the 1979 World Climate Conference and the subsequent establishment of the World Climate Impact Program. By closely examining multiple primary sources, including interviews, personal correspondence, and the minutes of the organizing committee meetings, I will highlight the pivotal role of this event in consolidating knowledge on climate change impacts developed throughout the 1970s as well as in shaping the scientific and political debates in the following decade.

Examining the papers presented at the World Climate Conference, I will show that the significant climate disruptions of the 1970s underscored the importance of addressing not only the global effects of climate change but also the regional and local impacts . This shift in focus represented an advancement in climate sciences, fostering interdisciplinary collaboration among atmospheric scientists, modelers, geographers, and agriculture and energy technicians, among others. I will argue that climate change impact assessments, beyond serving as tools for identifying potential impacts on

human activities and ecosystems, stimulated discussions on necessary research to enhance understanding of these impacts and improve research methodologies. The identification of research gaps culminated in the creation of the World Climate Impact Program to fill them. Finally, I will claim that climate change impact assessments emerged as potent political instruments, playing a pivotal role in communicating the gravity of climate change and elevating the issue to political prominence. Consequently, they became a focal point of controversy in subsequent years, significantly shaping different policy agendas and public discourse.

4. **Dania Achermann** (University of St. Gallen, Switzerland)

In the Shadow of Climate Models: CO_2 Studies as Climate Research

In the 1970s, climate research grew both in numbers of projects and of disciplines involved. In the shadow of the dominant climate models, many of them were not explicitly labelled "climate science" at that time. Only later, they were integrated into an ever more complex and interdisciplinary climate research. In my contribution, I would like to shed light on one of these initially peripheral fields in a small country: CO_2 studies in Switzerland.

In 1972, the Swiss National Science Foundation introduced a new funding category: "environmental sciences". The focus, however, was on medical science ("hygiene") and biology, while climate research was not part of it. The latter was still considered as classical climatology focusing on observation and statistical analysis of meteorological data. While in the US, climate modelling was taking off as the star of a new climate science, in the midst of Europe, the pace was different.

Seemingly far away from this new climate science dominated by models and US institutions, a small group of Swiss physicists worked on a method to study CO_2 in ice. Initially, their focus on CO_2 was driven by a carbon dating problem and not by an interest in CO_2 as a greenhouse gas. Similar to Charles D. Keeling's CO_2 measurements in Mauna Loa, the Swiss project did not fit into a traditional disciplinary category. However, the 1970s were not only a time of economic stagnation and hence funding restraints, they also led into a reorganisation of scientific institutions and research funding.

In my contribution, I will analyse the changing interest in CO_2 in Switzerland in the scientific and political context of the 1970s. In doing so, I hope to illuminate research activities that were not necessarily considered as climate research in the first place, and how they gradually became part of it.

Panel 3: Energy

1. **Andrew Seaton** (University College London, England)

E. F. Schumacher, Environmentalism, and the British National Coal Board

Today, the economist E. F. Schumacher is hailed as a hero of the modern environmental movement, particularly for shaping the concept of 'sustainability' through his best-selling book, *Small Is Beautiful* (1973). Less well-known is that Schumacher had spent twenty years at the British National Coal Board (NCB) as the Chief Economic Adviser.

These two sides of Schumacher's career might suggest little more than hypocrisy. Instead, based on archival materials from the Schumacher archive in Massachusetts., this paper uses this seeming contradiction to make two scholarly interventions. First, it explores how environmentalist concepts were forged in close relationship with fossil fuel institutions. The model of 'sustainability' in *Small is Beautiful* is the British NCB. For Schumacher, the organisation's decentralised administration, public ownership, and techno-futurism provided a more stable route to energy security than importing foreign oil. This early meaning of 'sustainability' prioritised the ideals of planning, holding natural resources in common, and social democratic politics, regardless of pre-existent (if not yet dominant) climate concerns about burning coal. Second, the paper uses Schumacher's allegiances to the NCB to demonstrate a plurality of ideas about 'energy transitions' during the mid-twentieth century. While Schumacher accepted oil's dominance on world markets, he endorsed coal as a pre-existing alternative to meet energy needs. His fears that oil might run out or that it was drawn from unstable nations entrenched his view that continuing with coal extraction was the best approach.

In sum, this paper contributes to scholarship on the intimate ties between sustainability and fossil fuels as well as the contested nature of energy transitions in the crucial decade of the 1970s for the rise of modern environmentalism.

2. **Abosede Omowumi Babatunde** (University of Ilorin, Nigeria; University of Oxford, England)

Nigeria's 1970s Oil Boom and the Ecological Crises in the Niger Delta Region

The discovery and commercial exploitation of oil in Nigeria's Niger Delta in the late 1950s ushered in an era of economic prosperity. Oil replaced agriculture as the main export earner and the source of government revenue. The oil boom in the 1970s provided the government with huge oil revenue for the socio-economic development of the country. While Nigeria experienced rapid rise in oil revenue in the 1970s, the oil-related activities of oil multinationals in the environmental fragile Niger Delta was carried out without compliance to global and local environmental regulations. This paper explores the ecological impacts of the oil-related activities of oil multinationals during the oil boom era of the 1970s on the Niger Delta. It seeks to explain how the oil boom influence the extractive relation between the Nigerian government, oil multinationals and the Niger Delta people. It demonstrates that the oil boom and the accompanied revenue influenced the Nigerian government laxity in enforcing local environmental regulation on the oil multinationals and foreground the worsening ecological crises in the Niger Delta. The oil multinationals and Nigerian government focused on maximizing oil profit and revenue, at the detriment of the Niger Delta people who experienced worsening oil pollution of the environmental resources that sustain their traditional livelihood of fishing and farming. The predatory nature of extractive politics of the Nigerian government and oil multinationals in the oil boom era continue to influence the current trends and dynamics of ecological insecurity and climate crisis in the Niger Delta region.

3. **Leah Aronowsky** (Columbia University, United States)

Synthetic Fuel Fever: The 1979 Energy Crisis and the Last Gasps of Environmental Liberalism

In 1979, the United States found itself in yet another energy crisis—the result, lawmakers believed, of the nation's overreliance on foreign oil imports. In response, policy proposals to develop a federally-funded synthetic fuels industry began gaining momentum. Synthetic fuels are liquid fuels produced from solid coal or oil shale. The idea was that, by exploiting its vast coal reserves to produce fuel, the United States could significantly reduce its dependence on foreign oil. There was just one problem: synthetic fuels were an incredibly carbon-intensive material, and some scientists worried about what they might mean for the looming climate crisis. In response, lawmakers

convened a series of hearings on what a synthetic fuels program would mean for the climate. Yet over the course of these hearings, the message became increasingly muddled: while a few scientists continued to insist that the US should abandon the synthetic fuels program, their concerns were drowned out by those scientists who believed the widespread economic pain of the energy crisis outweighed the potential threat to the climate. By summer 1980, the US had committed $88 billion to the task of getting a synthetic fuels industry up and running.

This paper uses the history of synthetic fuels to explore how the political imagination around climate change vis-à-vis fossil fuels was articulated at an early moment in the history of climate alarmism. It examines how policymakers and scientists grappled with the tension between the exigencies of the energy crisis and the need to stave off catastrophic global warming and argues that, circa the late 1970s, scientists' approach to climate change was deeply informed by assumptions about the inevitability of fossil fuels. In this framing, climate change was an unfortunate but inevitable cost of the social progress and economic development attendant to a fossil fuel-based way of life; rather than combat climate change's root causes, the world would need to take steps to adapt to its consequences.

4. **Richard Staley** (University of Cambridge, England; University of Copenhagen, Denmark)

Solving the Mystery? 1970s Paleoclimatology as a Hinge Point, from Oil Horizon Geology to Timescales, Sea Levels, and a Million Years of Global Temperature Variations

This paper considers work in ocean core paleoclimatology in the 1970s as a hinge point, drawing attention to tensions between the multiple arguments developed in the period and the way these have been represented both by the scientists who developed them and in broader circles, both in the 1970s and subsequently. I sketch two different historical arguments. The first uses a brief study of the work of Cesare Emiliani to explore some of the grounds and implications for research in foraminifera in oil field geology and new perspectives on human and species evolution, and contrasts this with two key results which became emblematic of paleoclimatology in the 1970s, Shackleton and Opdyke's development of an absolute timescale for ocean core work in 1973, and the still-more well-known 'Pacemaker of the Ice Ages' paper that decisively linked ocean cores with Milutin Milankovitch's astronomical explanation of the ice ages in 1976. My first argument suggests that for all its multifaceted complexity, representations of paleoclimatology in the 1970s such as Imbrie and Imbrie's Ice Ages: Solving the Mystery also offered a disciplinary image that tended to consider ice ages in terms of timescales rather than geology and evolutionary history, and thereby also to render ongoing relations with oil companies apparently peripheral to these aspects of the climate sciences. My second argument examines subtly different representations of Shackleton and Opdyke's diagram of oxygen isotope ratios and paleomagnetic data as exemplifications of one million years of climate history in the 1970s and in the seventh chapter of the First Assessment Report of the IPCC in 1990. Charting how this diagram was treated in different contexts and became a schematic of global temperature change for the IPCC will highlight revealing instances of the movement of resources between research scientists and policy-oriented accounts, demonstrating one visual argument through which the protean work of the climate sciences in the 1970s was subsequently narrowed in the service of later priorities.