cultural science

CULTURAL SCIENCE JOURNAL 17(1)
DOI: 10.2478/csj-2025-0001

sciendo

Negotiating Earth Time: Science, Bureaucracy, and the Construction of the Anthropocene

A Review Essay: Martin Bohle, Boris Holzer, Leslie Sklair, and Fabienne Will, *The Anthropocene Working Group and the Global Debate Around a New Geological Epoch*.

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Keywords: Anthropocene, Sociology of Organization, Knowledge, Matter of Fact, Bruno Latour, Geology, Bureaucracy, Social Construction, Zeitgeist, blurring boundaries.

Abstract: The book chronicles the work and ultimate rejection of the AWG, which sought to formalize the Anthropocene as a new geological epoch. It highlights scientific bureaucracy, the sociology of knowledge, and the blurring boundary between nature and human society.

Introduction: The Institutional Drama of a New Epoch

Few scientific debates in the twenty-first century have captured the public imagination or destabilized traditional disciplinary boundaries as dramatically as the proposal to formalize the Anthropocene as a new geological epoch. What began as an Earth System Science concept popularized by Paul Crutzen in 2000 eventually transformed into a high-stakes institutional, political, and cultural contest. Martin Bohle, Boris Holzer, Leslie Sklair, and Fabienne Will's book, *The Anthropocene Working Group and the Global Debate Around a New Geological Epoch*, provides a detailed, sociological, and historical account of the Anthropocene Working Group (AWG) from its inception in 2009 to its dramatic termination in March 2024.

The book offers a fascinating, highly informative look behind the scenes of international scientific bureaucracy, illustrating how a formal "fact" about Earth history is constructed, contested, and ultimately rejected. However, as compelling as the narrative is, it also presents distinct thematic tensions—ranging from a bewildering maze of organizational acronyms to deeper questions

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Cultural Science Journal is a peer-reviewed open access journal published by Erfurt University and Sciendo

regarding Latourian science studies, disciplinary anxieties, and the blurring line between nature and society.

Exciting Narrative, Acronym Exhaustion, and Organizational Complexity

At its core, the book reads like a scientific procedural thriller. It traces the makeshift beginnings of a dedicated group of scholars working under astonishingly precarious conditions. As the authors document:

“Given the absence of funding for almost all of the AWG work (prior to the remarkable securing of funding by the HKW for the Global boundary Stratotype Section and Point (GSSP) sample analyses), the work was done mainly in moments of spare time (evenings and weekends figured all too often), with communication generally by email.” (p. VIII)

Despite these constraints, the group was tasked with evaluating massive amounts of stratigraphic evidence. Yet, while the reader is drawn into the intellectual stakes and the dramatic vote over candidate sites—such as the "knife-edge decision" where "Crawford Lake came out just clear" over Sihailongwan Lake and Beppu Bay (p. XII)—the narrative frequently threatens to overwhelm the reader with an intricate web of scientific bureaucracies and acronyms.

Indeed, navigating the institutional framework requires keeping track of an extraordinary hierarchy of scientific bodies:

“The Subcommission on Quaternary Stratigraphy (SQS) of the International Commission on Stratigraphy (ICS), which set up the AWG in 2009 to tackle a specific question of geological terminology/methodology, is a third-layer sub-body within the International Union of Geological Sciences (IUGS). The IUGS, in turn, is a member of the International Science Council (ISC)...” (p. 14)

Added to this are the International Union for Quaternary Research (INQUA), the Geological Time Scale (GTS), the International Chronostratigraphic Chart (ICC), Global Boundary Stratotype Sections and Points (GSSPs), and Global Standard Stratigraphic Ages (GSSAs). The authors themselves note the "horribly complicated family relations" between these INGOs (p. 18). While this meticulous detailing is essential for understanding how scientific authority is nested, the sheer volume of institutional shorthand can rapidly leave the reader disoriented. Nevertheless, beneath the thick layer of organizational nomenclature lies a deeply engaging human and institutional drama.

The Social Sciences and the "MOPE" Complex: Constant Complaints of Marginalization

One of the most striking sociological insights emerging from the book is the behavior of the social sciences and humanities when invited to the table of hard-science debates. Historically, non-geoscientists have fought for recognition in global environmental change research. However, when drawn into the AWG's orbit, social scientists and humanities scholars demonstrated a familiar tendency: even while actively participating and reshaping the discourse, they persistently lamented their own marginalization.

This dynamic mirrors what Liam Kennedy (2016) famously described in an Irish context as the "MOPE" syndrome ("Most Oppressed People Ever")—a perpetual, self-fulfilling narrative of grievance and exclusion regardless of actual influence. As the book observes from interviews with non-members:

“There was repeated indication from the interviews with non-members that there exists indeed a certain feeling of marginalization toward the geological debate among scholars from the humanities and social sciences.” (p. 99)

This feeling of marginalization persisted despite the fact that the humanities and social sciences effectively hijacked the concept, turning it into a lucrative academic currency. Rather than adjusting to the strict chronostratigraphic parameters of geology—where Jan Zalasiewicz clarified, “We’re not trying to periodize human time at all, we are working on understanding Earth time” (p. 106)—social scientists criticized the term *Anthropocene* for treating humanity as an undifferentiated agent (*Anthropos*) (p. 14).

To assert their relevance, humanities scholars proliferated competing terms:

“While proposals such as the Machinocene by the philosopher Huw Price or the Robotocene by Roger Søraas and Håkon Fyhn... point to future-oriented conceptions of technology, Tim LeCain’s Carbocene, Christoph Bonneuil’s and Jean-Baptiste Fressoz’ Anglocene, or Steve Pyne’s Pyrocene refer in a more cause-oriented perspective to processes and actors in the past...” (p. 102)

Historian J.R. McNeill candidly explained the driver behind this obsession with the Anthropocene among humanists:

“‘Humanistic disciplines at least perceive themselves to be in crisis, they struggle to be judged as relevant and useful. And so saying things about the Anthropocene is a way to compete for relevance, for recognition, for legitimacy’ (Interview McNeill, 2017).” (p. 107)

The book shows that while social scientists complained about being sidelined by geologists, they simultaneously used the "Anthropocene" label as an epistemic battleground to fight their own disciplinary battles for institutional survival and cultural authority.

Deconstructing the "Matter of Fact": Bruno Latour and the Construction of Truth

For scholars of Science and Technology Studies (STS), Bohle et al.’s chronicle serves as a textbook empirical validation of Bruno Latour’s (1997) premise: there is no pure, unmediated "matter of fact." Instead, facts are constructed through complex, fragile networks of human actors, physical instruments, institutional protocols, and socio-political interests.

The formalization of a geological epoch is not simply a matter of uncovering an objective truth hidden in sediment layers; it is an extended negotiation. As the authors detail using Jürgen Renn’s framework, the AWG functioned as an "epistemic island" (p. 13) navigating a "massive borderline problem" characterized by "epistemic intruding" (p. 14). The process involved continuous voting, diplomatic compromise, and consensus-building:

“The AWG has voted twice, in May 2016 and May 2019, on the conceptual question of whether to propose a geological epoch, Anthropocene... The AWG stated in May 2019 that the Anthropocene should be a formal chrono-stratigraphic unit defined by a GSSP of the GTS with a lower boundary around the mid-twentieth century.” (p. 34)

Geological truth here was literally put to a vote. The physical markers—radiogenic fallout from nuclear testing, microplastics, fly ash—did not speak for themselves; they had to be translated through proxy signals and negotiated across committees. When the final proposal for Crawford Lake was submitted to the Subcommission on Quaternary Stratigraphy (SQS) in October 2023, the ultimate rejection in March 2024 was not accompanied by scientific rebuttal, but by administrative fiat:

“The result (rejection) was announced via a pre-prepared New York Times article published the morning after the deadline, on March 5 2024. No feedback or commentary was given, simply the raw vote numbers (12 against and 4 in favour of formalisation).” (p. XIII)

This cold, bureaucratic termination highlights Latour’s point: when an institutional network collapses or refuses to ratify an assemblage of claims, the "matter of fact" dissolves back into a contested "matter of concern."

Capturing the Zeitgeist: *We Have Never Been Modern* and the Collapse of Nature/Culture

The immense global traction of the Anthropocene—far beyond the narrow corridors of stratigraphy—reflects its alignment with a broader cultural and intellectual zeitgeist. In *We Have Never Been Modern*, Bruno Latour argued that Modernity was built on a dual illusion: the strict purification of "Nature" on one side and "Culture/Society" on the other. The Anthropocene exposes this division as a fiction, demonstrating that human history and Earth history have become inextricably entwined.

Bohle et al. demonstrate how the Anthropocene conceptualized this collapse:

“In the Anthropocene, humanity is no longer just one of many factors that contributed to a fundamental change in the Earth system, but the central, ‘pre-dominant’ factor.” (p. 96)

Because human agency now leaves a permanent physical signature in the lithosphere, the concept functions as a quintessential "boundary object":

“Oscillating between these different contexts, the Anthropocene concept can be considered a communicative ‘boundary object,’ i.e. a concept that is ‘both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites’.” (p. 3)

This hybrid character explains why the concept was embraced so enthusiastically outside geology, particularly by cultural and artistic institutions. Major multimedia initiatives, such as "The Anthropocene Project" at Berlin’s Haus der Kulturen der Welt (HKW) and "Welcome to the Anthropocene" at the Deutsches Museum in Munich, illustrated "how the AWG embraced the arts and how the arts embraced the Anthropocene" (p. 160). In fact, the HKW became the primary financial benefactor of the AWG's analytical work (p. VIII, 27). This alliance between stratigraphers and avant-garde art institutions perfectly captures the post-modern zeitgeist: the realization that "nature" can no longer be studied in isolation from human culture, economics, and politics.

Institutional Reluctance: Geological Institutions and Forced Engagement

Why did the formal geological hierarchy ultimately reject the Anthropocene? As Bohle et al. compellingly argue, the leadership of the IUGS and ICS had no intrinsic desire to engage in this debate. They felt coerced into establishing the AWG by external societal hype and "epistemic intruding" from Earth System Scientists (p. 14).

For traditional geologists, stratigraphy is a conservative, deep-time discipline. Having only recently settled the subdivisions of the Holocene in 2018 (p. 19), the parent bodies viewed a mid-twentieth-century "epoch" as an absurdly short, media-driven aberration. The relationship between the AWG and its parent bodies was strained from the start:

“The work was carried out, too, in a context of strained relations between the AWG and the higher echelons of the ICS and International Union of Geological Sciences (IUGS) executives, stemming from

the long-standing opposition of key members of those executives to a formalised Anthropocene per se." (p. XII)

The geological hierarchy resented the public and media visibility of the AWG. While the 35th International Geological Congress noted "considerable media interest... generated from around the World" (p. 31), conservative geologists viewed this visibility with deep suspicion:

"Many geoscientists also objected to the AWG's blurring of the boundary between scientific fact-finding and public outreach, regarding it as an illegitimate effort to 'politicize' science." (p. 184)

Consequently, the parent organizations treated the Anthropocene as an unwanted intrusion into their autonomous disciplinary jurisdiction. When the SQS finally voted down the proposal in early 2024, it was an act of institutional self-defense—an attempt to slam the door on external societal pressures and restore traditional disciplinary boundaries. Yet, as the authors conclude, this institutional retreat came at a heavy cost:

"Geology, by contrast, has thrown away an opportunity to become involved in, and take ownership of, one of the most pressing and widely relevant scientific issues of this time." (p. XV)

Conclusion

The Anthropocene Working Group and the Global Debate Around a New Geological Epoch is an essential contribution to the sociology of science, environmental humanities, and stratigraphy. While the reader must fight through a dense thicket of bureaucratic acronyms, the reward is a nuanced portrait of contemporary science in action. The book illustrates that whether or not the Anthropocene ever receives an official stamp on the International Chronostratigraphic Chart, the debate has permanently altered our understanding of scientific fact-making, interdisciplinary politics, and the unravelling divide between nature and human history.

Acknowledgements

I thank Helmut Heinisch and Claudia Panwitz, who revealed the beauty of Deep Time to me during the "geological crossing of the Alps" organized by them. And I thank Martin Bohle, with whom I can chat about the Anthropocene—time and time again.

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