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Introduction to the Special Issue on World-Systems Analysis and the Anthropocene

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Across the social sciences and humanities, and in diverse forms of popular media around the world, discourse about the Anthropocene is proliferating. From the plastic particles found in deep sea trenches to the unfolding of Earth's sixth mass extinction, among many other indicators—notably anthropogenic climate change—it is clear that human impacts may have irreversibly perturbed the planet. This special issue sets out to deepen and broaden the conversation from a world-systems perspective. Building upon a long tradition of scholarship deploying world-systems theory to understand global environmental change, we wish to explore the past, present, and future of the world-system with/in the Anthropocene. In this introduction we first offer prefatory remarks about the Anthropocene (by no means a universally accepted concept) that are meant to help orient readers to debates around the Anthropocene before turning to a summary of the contributions and the themes that emerge in this Special Issue.



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The “Anthropocene” in Social Science and Popular Discourse¹

Reading this Special Issue, there are at least two important questions that need to be raised. The first is how world-system scholars deal with the “Anthropocene or Capitalocene?” debate. The second is how scholars and the media deal with climate change and/or global warming (CC/GW) as metonyms for the Anthropocene (substituting the part for the whole) and the ideological significance of this apparently innocuous linguistic choice.

The idea of the Anthropocene puts journalists, scientists, and the rest of us in a series of impossible dilemmas created by the choices taken (knowingly or unknowingly, consciously or unconsciously, deliberately or casually) at as yet still contentious historical junctures by different groups of people in different places at different times. For world-systems research, the most important expression of these dilemmas is probably the debate that swirls around the effort to establish the “Capitalocene” as a more accurate and radical conceptual alternative to the “Anthropocene,” a term that appears to portray humanity as an undifferentiated totality, suggesting that all are equally responsible for global ecological transformation (compare Moore ed. 2016 and Angus 2016b). Yet, the rush to embrace the Capitalocene often ignores the fact that, with few exceptions, formally designated communist or socialist societies have embraced similar patterns of unfettered economic growth based on fossil fuels (e.g. Smith 2015; Bruno 2017). It is possible that the Capitalocene, while it raises important issues, may also serve as a distraction in these perilous times.

While not disputing the decisive role of the capitalist world-system in the creation of anthropogenic ecological destruction, we need to ask if the argument is that capitalists set out from the beginning of the exploitation of fossil fuels deliberately to destroy the planet and the capitalist system for their offspring? Did Karl Marx, warming himself by the coal fire in chilly London, do the same? And today, when information about the perilous state of the planet is readily available, we who drive, fly, consume excessively, the lucky minorities, and the not so lucky billions who do not consume excessively but whose struggles to survive also impact adversely on the ecosystems that sustain them—are we all exonerated? Are we all, more or less, in denial?

In *The Transnational Capitalist Class* (TCC), Sklair (2001) argued that the TCC can and should be held responsible for ecological unsustainability because of its insatiable appetite for economic growth, and that through the culture-ideology of consumerism it exerts tremendous pressure on everyone on the planet towards consuming finite resources. So, those of us who choose to consume far beyond our basic needs cause ecological damage, as do many of those who consume barely to survive. This is the reality of life that global capitalism provides in the Anthropocene. To argue that we know the few who are really to blame is as naive as saying we are all to blame equally. In the first decade of what we might label “Anthropocene studies” (roughly from the year 2000) most Earth System scientists ignored the political and moral implications of the designation (apparently implicating all humans). More recently, however,

¹ This section borrows from Sklair, Ed. (2020)

questions about capitalism, imperialism, colonialism, racism, and ecological justice are becoming acknowledged by Earth System scientists (Lewis and Maslin 2018).

The second question asks how the Anthropocene has been dealt with by scholars and media. Within the academic world, two epistemic communities (sometimes overlapping) emerged when the Anthropocene appeared in the public record, first in an obscure geological newsletter in 2000 and then, more visibly, in a short statement in the journal *Nature* in 2002 by Paul Crutzen (usually identified with his Nobel Prize for Chemistry in 1995). The first bubble, which encapsulates the wider Earth System science community, was rapidly followed by another, larger, bubble encapsulating social sciences and environmental humanities (SS/EH). Not much SS/EH research addresses the Earth System science from which the Anthropocene idea emerged. Sociologists, anthropologists, historians, economists, and philosophers who write on the Anthropocene do not normally go into the field with geological hammers, or measure ocean acidification, deforestation, the death of coral reefs or other material consequences of anthropogenic eco-system change. This has led some to speak about the Anthro-scene (Lorimer 2016). Anthro-scene scholars do not usually do Earth System science research themselves, to a greater or lesser extent they accept the peer-reviewed research and try to work out what it means for their own disciplines and for human (and non-human) life on Earth in general. This is the rather confusing picture that media around the world are forced to contend with in communicating what the Anthropocene is all about to the general public. We note, too, that there are uncomfortable parallels here with how scientists and the media now deal with the Coronavirus pandemic.

The Anthropocene Media Project (AMP) started in late 2016, with a team of volunteer researchers—around 45 in total, mostly graduate students plus a few professors and others—that began collecting data from online searches of newspapers, magazines, and news websites from around the world (see Sklair Ed 2020: Part 1).² AMP participants were contacted via personal networks in and around the rapidly growing scholarly community engaged in Anthropocene studies, the project had no formal institutional funding. Together, researchers scoured the media of over 140 countries for mentions of the “Anthropocene.” Only in 29 countries did the media fail to produce a single result. The 4,000+ items found included long and short articles and passing references, and there were over 600 media items with stories on Anthropocene-related creative arts events.

Media items on climate change or global warming exceeded coverage of the Anthropocene by at least one hundred to one, probably much more (see Sklair ed 2020: chapter 1). It is also important to be aware of corporate campaigns to pressure the media to shun the rather more alarming idea of “global warming” in favor of “climate change,” which could more easily be presented in terms of natural processes (Rich 2018). Neither “global warming” nor “climate change” directly implicates the impact of the human species in either of these two labels for the non-science population, while the Anthropocene (often referred to as “the Age of humans/man”) explicitly does this, even for non-scientists. This suggests that the relative paucity of Anthropocene

² Media with paywalls were excluded.

coverage in the media may have an ideological motive. The analysis of Anthropocene coverage in the AMP supports this interpretation.

Most of the Anthropocene-related articles researchers found communicated one of three main narratives, as follows:

1. Neutral descriptive reporting, including passing mention of the Anthropocene, disagreements among scientists especially over starting dates, and/or the Anthropocene presented as a continuation of natural processes, the **neutral frame**.
2. The optimistic **‘good’ Anthropocene frame** comprises a broad spectrum of mutually reinforcing narratives, ranging from the moderately to the definitely alarming. All recognize that the planet and humanity itself may be in some danger, and that we cannot ignore the warning signs. However, if we are clever enough, we can save ourselves and the planet with technological fixes (notably geoengineering) and other strategies that present opportunities for industry, science, and technology. The recognition of the need for change typically includes renewable energy, population control, conservation, sustainability, and resilience but stops short of any concrete programs that might radically challenge the economic and political status quo. This narrative provides a more or less sophisticated **optimistic ‘good’ Anthropocene frame**.
3. Recognition that human survival is at risk, that we cannot go on living and consuming as we do now, that we must strive to change our ways of life radically, for example by bringing capitalism to an end and creating new types of global governance or state-less societies or religious/spiritual renewal, whether these are realistic or not. This is labelled the **pessimistic radical change frame**.

The first two narratives occurred in over 99% of the media stories, about equally divided. There were very few stories that engaged concretely with the need for radical system change. Media all over the world do report the Anthropocene in the context of “extinction,” but this is usually presented in terms of the rapidly increasing rate of flora and fauna extinction and loss of biodiversity in recent decades, the source for which is often an influential series of reports by the World Wide Fund for Nature (WWF). It is notable that with a few exceptions, reporting of these issues (and statements by WWF officials) rarely raise the possibility that the human species could become extinct because of the collapse of ecosystems on which human life on the planet depends. The reasons for downplaying these risks seem obvious. Governments speak fine words and pass laws to deal with the “climate crisis,” but in most countries state revenues are dependent on high-emission industries. Research suggests that many purported mitigating initiatives (renewable energy, reduction of single use plastic products, recycling, more efficient light bulbs, etc.) will be “too little too late.” Wynes and Nicholas (2017) argue that having children is the single most important factor in CO² emissions. Corporations spend millions to create “green” images for their brands, while the state, the economy, and the world-system are locked into the culture-ideology of consumerism. The media (big and small) rarely find any genuine route out of the “crisis,” often

acknowledged but, apparently, paralyzing. A critical analysis of the Anthropocene, radically reformulated, might just offer light at the end of a very long and dark tunnel. This is beginning to emerge, for example via theories of eco-socialist revolution at one end of the spectrum (Angus 2016a), to socialism, community by community, at the other end (Sklair 2019).

World-systems Analysis and the Anthropocene: Summarizing the Contributions

In the last section, we have sought to help orient readers of the special issue by discussing the broader discursive context in which the “Anthropocene” is situated. In what remains, we summarize the contributions to the special issue.

In his theoretical contribution to the special issue, Alf Hornborg wrestles with the conceptual pitfalls of “value” in ecologically inclined Marxist and world-systems thinking. Through a critical engagement with eco-Marxist and world-systems theorists, like Stephen Bunker, John Bellamy Foster, and Jason Moore, Hornborg argues that their “approaches share the notion that the biophysical resources appropriated for capitalist production should be conceptualized as underpaid values.” The problem here is that this concept of value “subsumes nature within society,” given that “there are no natural values, only projections of human valuation onto what are ultimately neutral biophysical entities.” In Hornborg’s estimation “what is asymmetrically transferred from peripheries to cores [in the world-system] are biophysical resources, not values.” For this reason, it is crucial, as Hornborg maintains, that in thinking about the Anthropocene from a world-systems perspective that we recognize that the world-system and the earth system (i.e. society and nature) are ontologically one but analytically distinct.

The next two articles deploy the theoretical framework of the treadmills of production/destruction, which were developed in the context of environmental sociology, in thinking about the social-organizational roots of the Anthropocene. In “Nuclear Weapons and the Treadmill of Destruction in the making of the Anthropocene,” Michael Lengefeld situates the socioecological consequences of militarism, and thus empire, in the making of the Anthropocene. Lengefeld advances treadmill of destruction theory, a framework that centers how “military organizations drive the expansion of negative environmental practices and inequalities through the logic of arms races and geopolitics” to think about the geological consequences of nuclear weapons development. Through a case study analysis of American nuclear weapons production, specifically the Hanford Nuclear Reservation and the Rocky Flats Nuclear Arsenal, Lengefeld argues that military activity, via a treadmill of production mechanism, “uniquely endangers human health, generates mutant ecologies, and poses a threat to biodiversity” in the Anthropocene. Along a similar vein of inquiry, Chad Smith and co-authors focus on illegal coca production and gold mining in Latin America to think about how treadmills of production and destruction operate and interact to produce significant environmental change in the region. Taking a case study approach focused on Colombia and Peru, and the global commodity chains of which coca cultivation and gold mining are linked to, these authors demonstrate how these treadmills are distinctive in disturbing ways, “Where a treadmill of production operates, economic competition is propelled by an unsustainable and ever more frenzied extraction of resources and injection of toxic byproducts into the environment; where a treadmill of destruction operates, arms races and military struggles

are focused on unsustainable extraction of biophysical resources or degrading an enemy's environment (ecocide)." Moreover, the authors point to the "daunting challenges of governance in the Anthropocene" given the malleability of both treadmills.

Like Smith et al., Jamie Sommer and Andrew Hargrove are concerned with the issue of governance in the time of the Anthropocene. In their article, they assess how the strength of environmental governance (measured by environmentally related taxes as a percentage of total tax revenue) affects carbon dioxide emissions for 75 countries between 2000-2011. Findings from their analysis suggest that the impact of environmental governance on carbon dioxide emissions varies according to countries' positions within the global hierarchy of the world-system. For Sommer and Hargrove, their analysis provides "evidence for the critique that the dominant conceptualization of the Anthropocene masks inequality [and power] while promoting solutions that do not address the political, economic, and social causes of climate change."

Minqi Li also focuses on earth's atmospheric composition, but with an emphasis on the global emissions budget. He considers two principles, inertia and equity, for how global emissions might be distributed among the world's states and ultimately finds that neither principle will limit global warming to no more than 2 degrees Celsius without curtailing economic growth. Thus, as Li argues, "a necessary condition for global climate stabilization is for a large part of the world (especially China and the OECD countries that have been responsible for most of the carbon dioxide emissions) to accept either zero growth or negative growth." Neither the present capitalist world economy driven by endless capital accumulation nor market socialism are sufficient to achieve zero or negative growth. Instead, as Li suggests, only "an economic system based on social ownership of the means of production and society-wide planning may provide society with the necessary economic tools to achieve degrowth and climate stabilization."

Shifting attention from the atmosphere to the hydrosphere, Brian Francis O'Neill's contribution to the special issue extends the discussion of the capitalist world ecology and the Capitalocene to consider the "oceanic frontier, as the latest trend in the abstraction of value from the environment." Drawing upon original archival research, O'Neill analyzes "the conquest of the oceanic frontier" by focusing on two moments in the history of desalination during the Cold War and the neoliberal financial turn in the 21st century. As O'Neill argues, "The Cold War opened the ocean as a commodity frontier as part of the *Pax Americana*. Then, when this stagnated, financialization techniques were deployed to successfully appropriate seawater. Because value is extracted locally and distributed globally to investors, the role of the international finance reinstates the cultural hegemony of the Capitalocene that privileges supply-side water management solutions."

In their article, Andrew Milner and J. R. Burgmann deploy world-systems analysis to consider global literary production more broadly, and "Anthropocene" or "Climate fiction" in particular. Milner and Burgmann apply a world literary system model that borrows from Wallerstein's tripartite core, semiperiphery, periphery analytic, to examine the global distribution of literary production, considered as a subgenre of science fiction (SF), focused on anthropogenic climate change. In the end, the authors find that "cultural geography of climate fiction exhibits significant,

albeit minor, variations from the more general structure of the global SF field. At the core, there appears to be a comparative overproduction in Germany; in the periphery, an interestingly creative comparative overproduction in Canada, Finland, Australia, and South Africa.”

The final batch of articles in the special issue concentrates on matters of colonialism, race, and inequality. First, James Fenelon and Jennifer Alford foreground Indigenous models of social organization as alternative to the global capitalist world-system and the ecological havoc it has created on earth in the Anthropocene. These authors describe how colonialism and capitalism disrupt(ed) Indigenous societies along ten social spheres—from the political, to trade and the economy, to the family—with immense socioecological consequence. Moreover, in addition to addressing the colonial roots of the Anthropocene, Fenelon and Alford “conceptualize how various historical, more sustainable approaches to land and community management, as practiced by numerous Native societies, can be adapted to challenge systems that threatens local, regional, and global human and ecological health, wellbeing, and sovereignty.”

In their contribution, Michael Murphy and Caitlin Schroering assert the importance of thinking about racialization, colonial domination, and capitalist accumulation with regard to the global geological changes indexed by the concept of the Anthropocene. More specifically, they turn to the notion of the Plantationocene “because of the potential it holds for implicating raciality, coloniality, and capitalism in the past, present, and future socioecological changes on planet Earth.” They contend that although the Plantationocene is an important intervention, its initial conceptualization has critical flaws that a world-systems perspective might help mitigate. Ultimately, they argue that “What is at stake here is whether or not we are able to recognize the ecological changes wrought by plantations on commodity frontiers as not just a matter of capitalist expansion, but also racial and colonial assimilation into a world-economic order that institutes a planetary-wide hierarchy of human and more-than-human life.”

Finally, in the short essay that concludes the special issue, Chaya Ocampo Go reflects upon the Anthropocene from the vantage of the Philippines and its vulnerability to disasters, like the devastating Super typhoon Haiyan. Go’s intervention from the Global South is intended to “temper [Global] Northern anxieties over an uninhabitable future with sobering reflections on the everyday realities of slow and chronic violence in the ‘Philippine Anthropocene.’” Moreover, as Go observes, the vulnerability of people in the Philippines to increasingly quotidian disasters is compounded by “state sanctioned forms of abandonment and terror.”

Conclusion

When we set out to curate this collection of scholarship, our interests were mainly with seeing how scholars might approach the topic of the Anthropocene from a world-systems perspective. Thus, we were less interested in rehearsing well-worn debates about the naming of this most recent phase of earth history in which humankind has permanently written itself into the geologic record. Nor were we concerned with providing a definitive answer to the question of how world-systems scholars should approach the subject. Therefore, in bringing together these contributions with their varied substantive foci and methodological approaches, we are very pleased to offer this special issue as an opening to further intellectual engagement on world-systems analysis and theory and

the Anthropocene. We conclude this introduction by extending our gratitude to the authors, the editorial team at *JWSR*, and the anonymous reviewers for their constructively critical attention to all the drafts.

About the Authors: Leslie Sklair is emeritus professor of sociology at the London School of Economics. He is best known for his books on capitalist globalization, *The Transnational Capitalist Class* (2001), *Globalization: Capitalism and its Alternatives* (2002), and *The Icon Project: Architecture, Cities, and Capitalist Globalization* (2017). His new book, *The Anthropocene in Global Media: Neutralizing the Risk*, will be published at the end of 2020. He is president of the Global Studies Association (UK). Dr. Michael Warren Murphy is an Assistant Professor of Sociology in the Department of Sociology at the University of Pittsburgh. His recent work develops an anticolonial environmental sociology to think about the ecological significance of racialization, slavery, and colonialism.

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