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Book Review

Kathleen Dean Moore, *Great Tide Rising: Toward Clarity & Moral Courage in a Time of Climate Change* (Berkeley: Counterpoint, 2016), 340pp., $16.95 (pbk), ISBN: 978-1-61902-906-4.

About fifty-five million years ago, and for reasons mostly unknown, the earth's carbon cycle changed dramatically over the course of about twenty thousand years, a blink of the eye in geologic time. Geologists who study this time period, known as the Paleocene-Eocene Thermal Maximum, or PETM, clearly delineate in the fossil record two separate pulses of carbon dioxide that were released into the earth's atmosphere. We can only speculate about the source of the first pulse—perhaps a rapid, planet-wide increase in volcanic activity? The source of the second, though, almost certainly derived from greenhouse gas feedback loops: a warming planet initiated terrestrial changes, such as thawing permafrost or intense forest fires, that 'unlocked' sequestered greenhouse gasses. These unlocked gasses, then, warmed the planet more, which led to more greenhouse gas, and so the cycle continued. Once a feedback mechanism begins, little if anything can be done to stop it.

For climatologists studying global climate change, the PETM is crucial, for it is the one event we have identified in the fossil record that most closely mirrors changes currently underway in our atmospheres and oceans. Humans have caused these changes, of course, by burning fossil fuels, but as the permafrost thaws and carbon sinks disappear, the earth may soon experience a 'climate shock' accelerated by feedback mechanisms. During the PETM, global average temperatures rose by eight degrees Celsius, initiating profound shifts in the range and speciation of earth's flora and fauna. The most important difference between the PETM and twenty-first-century global climate change is that the PETM unfolded at a snail's pace compared to the two hundred and fifty years of change since the advent of the modern industrial era. The only planetary-wide changes we know of that have occurred as rapidly happened after a nine-mile wide meteorite struck the Gulf of Mexico to close out the Cretaceous period and the age of the dinosaurs.

In *Great Tide Rising: Toward Clarity & Moral Courage in a Time of Climate Change*, Kathleen Dean Moore tries to intercede in the ever-more calamitous and increasingly out-of-control collision between carbon and climate. She rightfully notes that, for all their tremendous instrumental value, science and technology have yet to change the apocalyptic course upon which we have set ourselves. Science alone, she argues, cannot convince policy makers and the common consumer—that is, all of us—to change our behaviors. If we are to avert incalculable suffering among all the planet's life forms in the decades to come, dramatic, comprehensive, lifestyle-changing action

must begin immediately. Our inability to act, she claims, is a moral failure, and only once we recognize that climate action is moral action will we begin to change course as individuals, as societies, and as a global community.

Divided into four parts (*it's wrong to wreck the world; a call to care; a call to witness; a call to act*), Part 1 lays out the powerful claims that Moore unpacks and elaborates in the three parts that follow. Why is it wrong to wreck the world? Because, Moore argues, the world is replete with wonder and mystery, and contains uncounted multitudes of brilliant life forms whose evolutionary processes have unfolded across millions of years. Why is it wrong? Because the future's children will never benefit from a hydrocarbon economy, and yet they will have to suffer the consequences as climate regimes shift, fresh water resources vanish, sea waters rise, and crops fail. Why is it wrong? Because in this ever-unfolding, ever-imperfect project of democracy we so deeply value, we believe in human rights and justice. Here Moore presents the obvious in blunt terms. Those who are yet to be born will have no option but to live with the outcomes of the choices we make today, outcomes that will seriously undermine life, liberty, and human thriving.

Part braided essay, part philosophy lesson, part ethical argument (and with a smattering of poetry), the book tenaciously tries to convince the reader why every human on earth must adopt an ethical position about climate change. Refusing to adopt a position—refusing to care—*is* to adopt a position; complacency is an ethical orientation toward planetary-wide environmental shifts unfolding at a pace rarely seen in four-and-a-half billion years. 'The temptation', she suggests, 'is to turn away from a sadly degraded world, but I'm starting to understand how an attitude of attentiveness to the natural world can be a matter of moral significance—that it may in fact be a keystone virtue in a time of reckless destruction, a source of decency and hope and restraint' (p. 75).

She uses virtue theory, duty-based theory, and consequentialist theory to dismantle the arguments not just of climate deniers, but also of 'new deniers'—those who are resigned to the devastation we have sewn, and of those who suggest that adaptation is the best way forward. Environmental problems are not primarily technological, scientific, economic, or national security problems: 'Taking whatever you want for your profligate life and leaving a dangerous and ransacked world for the next generation is a moral failure, and it calls for a moral response' (p. 237). How, then, in a world of seven-and-a half billion humans, can we make our way forward into 'the great turning'? In 'a call to witness', she suggests that scientists must set aside scientific protocol, which bars them from adopting a position, and become citizens. Writers must use memory, imagination, and wonder to communicate the truth of what is happening. And wilderness must be allowed to remain just that: wilderness, endowed as it is with limitless genetic, creative, and spiritual possibilities.

Finally, in Part 4, 'a call to act', Moore arrives at the heart of her moral prescription: personal integrity judiciously upheld is our best hope. Throughout the book, she deploys moral analogies to dismantle the arguments against action, analogies that build her case for personal responsibility and integrity. Why should we change our lives when others refuse? Because we wouldn't choose to own slaves when our neighbors do. How can we act if there is doubt about the extent of anthropogenic agents? Because we wouldn't take a feverish child and wrap her in hot blankets or surround her with fire. In making a moral case for personal integrity she admits that our actions might not have an impact. We should not ask whether or not our acts will

save the world, she suggests. Instead, our calling is to act in a manner consistent with what we believe is right and good, 'to celebrate and care for the world, even if its fate breaks our hearts' (p. 318).

It is difficult at times to find a clear, logical through-line, and some readers might be left wanting a more succinct, more clearly delineated, more economical argument about Moore's moral and ethical concerns. In parts of the book, Moore relies on her previously published essays, and, taken as a whole, it can feel a bit like Frankenstein's monster, especially when she adds poems and songs by other writers, as well-placed as they are. But her audience is not composed of professional academics alone, and her appeal is broad. As such, *Great Tide Rising* is an eloquent and powerfully illustrative trans-disciplinary work, and its organizational strategy, its logic, and its appeals elicit a profound feeling of desperation. Perhaps our best way forward, Moore argues, is to create as many places of refuge as possible, for the great bottleneck of mass extinction waiting for us in the decades to come narrows with each passing day.

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