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Synchronising Human and Geological Temporalities in Climate Fiction: the Example J. G. Ballard's *The Drowned World* (1962)

Marion Moussier

Introduction

In order to bring the geological timescales of climate change to our human understanding of time, Timothy Clark states that the role of Anthropocene literature should be one of scalar translation, so as “to transpose into a representation on the human scale, events and processes that exceed [...] the usual [...] temporal limits of how we think, or feel involved” (Clark 2015, 38). However, many critics such as Amitav Ghosh argue that the conventional novel form cannot accommodate the geological timescales of climate change, since it is restricted to the individual lives of the characters in a narrow historical context (Ghosh 2016). *The Drowned World* is a post-apocalyptic eco-dystopia that offers a convincing instance of how to transcend these temporal boundaries. Set in a distant future, the novel follows a scientific expedition studying the biological transformations of their environment which has been drastically altered by global warming and its multiple consequences. We read that “the continued heating of the atmosphere had begun to melt the polar ice-caps. The entrained ice-seas of the Antarctic plateau broke and dissolved, tens of thousands of glaciers around the Arctic Circle, from Greenland and Northern Europe, Russia and North America, poured themselves into the sea, millions of acres of permafrost liquefied into gigantic rivers” (21) This scenario is now very familiar, which is what makes it, for many critics, a climate fiction before anthropogenic climate change was fully understood. Adeline Johns-Putra and Adam Trexler, for instance, place it at the top of their chronological list of 300 climate fictions and even suggest that it has started the first wave of the genre (Putra 2016). Although the novel does not explicitly attribute its global warming scenario to anthropogenic causes, its engagement with climate change can be linked to contemporary environmental concerns. Published in the same year as Rachel Carson’s *Silent Spring* (1962), it crystallises historically specific environmental anxieties in response to the nuclear threat and accelerating capitalist growth. Moreover, its focus on deep time anticipates the shift in temporal perception induced by the naming of the Anthropocene, which, as historian Dipesh Chakrabarty argues, marks the end of the distinction between human and geological history (Chakrabarty 2009). In order to demonstrate how the novel reconnects these disjointed timescales, I will first focus on its portrayal of the flooded city as a meeting ground for human and geological

time, then examine the crucial role of the protagonist in synchronising these temporalities through his relationship with the environment, and will conclude by exposing how the novel challenges some of the epistemological positions at the root of the environmental crisis. This will lead me to suggest that the novel represents an early attempt at scalar translation, insofar as it manages to bring geological temporalities to our human understanding of time in the restricted form of the novel.

I) Return to Deep Time

First of all, the novel departs from the anthropocentric conventions of its form by removing its protagonists from the Holocene and inviting the reader to plunge into the deep time of planetary history. The setting is described as “a world of competing organic forms returning rapidly to their Paleozoic past” (18). According to the team of scientists, the conditions of life on Earth have reverted to a point either between the Paleozoic and Mesozoic or between the Permian or Triassic, referring in either case to the largest extinction events of the planet's history. The scientists survive in a deserted city which has been reclaimed by fauna and flora directly inspired from the known records of these geological eras. One of the scientists tells us that “in response to the rises in temperature, humidity and radiation levels, the flora and fauna of this planet are beginning to assume once again the forms they displayed the last time such conditions were present—roughly speaking, the Triassic.” (41). Similarly, Kerans, the protagonist, observes that “the reptiles had taken over the city. Once again they were the dominant form of life. Looking up at the ancient impassive faces, [he] could understand the curious fear they roused, rekindling archaic memories of the terrifying jungles of the Paleocene, when the reptiles had gone down before the emergent mammals, and sense the implacable hatred one zoological class feels towards another that usurps it” (17).

Set in the far future, the temporal perspective of the novel is twofold: it both invites the reader to consider our distant geological past and to look back on our present as history, with only ruins left to suggest that humans were once the dominant life form. By doing so, it situates modernity in geological history, an idea best crystallised in the symbolic role of the flooded city as the meeting ground of human and geological temporalities.

The Flooded City as a Transition Zone Between Human and Geological Temporalities

The team of scientists operates in a nameless flooded city, which is only revealed to be London after more than a hundred pages. Its anonymity suggests that it could be any capital city in the world, which emphasises their common vulnerability to changing climatic conditions. According to

Umberto Rossi, four symbolic mutilations transform London into an archetypal dead city which indicates the disappearance of humankind both as a cultural and biological presence (Rossi 1994). Firstly, it is deprived of population, it is no longer a human space and has been reclaimed by reptiles. Secondly, it is deprived of name, memory and meaning, since its identity remains unknown to the characters who only perceive it as an object of biological study. Thirdly, it is deprived of human form, as the encroaching jungle makes it not longer visually identifiable or clearly delimited. Fourthly, following the loss of human population, meaning and form, the conventional understanding of human time disappears. As a result, the city becomes a liminal space between formerly human time and deep time, an idea symbolised by the intermingling of modern buildings with pre-human fauna and flora. Indeed, we read that “the tree-covered buildings emerging [...] seemed millions of years old, thrown up out of the Earth's magma by some vast natural cataclysm, embalmed in the gigantic intervals of time that had elapsed during their subsidence” (46), or again that “the somber green-black fronds of the gymnosperms, intruders from the Triassic past, and the half- submerged white-faced buildings of the 20th century still reflected together in the dark mirror of the water, the two interlocking worlds apparently suspended at some junction in time” (9). The disappearance of modern urban human time is most conspicuously illustrated with the loss of the city clocks, which either seem out of place in the new landscape or appear to adopt a slower, almost imperceptible temporality. Kerans states that “two white-faced clock towers protruded through the vegetation, like the temple spires of some lost jungle religion” (60) and notices that “one of the clock-faces was without its hands; the other, by coincidence, had stopped at almost exactly the right time [...] Or was it not stationary [...] but merely so slow that its motion appeared to be imperceptible? The slower a clock, the nearer it approximated to the infinitely gradual and majestic progression of cosmic time”. (63)

According to Ballard himself, the return to deep time is particularly symbolised by water, a pervasive metaphor used throughout the novel to connect human and geological history. When the city walls, dykes built to resist sea-level rise, collapse under the pressure of water, the nonhuman world overflow the formerly human world, making modern understandings of human time obsolete. In short, both historical time and urban time come to an end, literally and figuratively drowned in geological time. While the city stands as a transitional zone between human and geological time, the synchronisation of these temporalities is most strikingly illustrated through the protagonist's relationship with his environment.

II) Humans in Deep Time

Born in the polar colonies where dwindling human populations cling to the remnant of modern life, the protagonist and his team struggle to adapt to the hostile climate of the drowned city. Yet, although this unfamiliar landscape is at first alienating, it becomes increasingly familiar as it leads them to progressively reconnect with their ancestral nature. The characters are so entangled with their environment that they follow a synchronous backwards transformation, slowly returning to older modes of consciousness and remembering ancient biological memories. The team's doctor asserts that "as we move back through geophysical time so we re-enter the amniotic corridor and move back through spinal and archaeopsychic time, recollecting in our unconscious minds the landscapes of each epoch, each with a distinct geological terrain, its own unique flora and fauna" (43). As a result, they give up their scientific duties and plunge in a journey backwards through species history which ultimately leads to their psychological and physical disintegration.

Humans as Archives of Deep Time

In order to explain the entanglement of geology, biology and psychology it depicts, the novel draws inspiration from Ernst Haeckel's speculative biology and Sigmund Freud's metapsychology. The former is used to justify the psychological transformation experienced by the characters. The theory claims that memories associated with the different stages of human evolution are stored in the spinal cord and made accessible to consciousness by the changing geological conditions. According to the team's doctor, "the further down the central nervous system you move, from the hindbrain through the medulla into the spinal cord, you descend back into the neuronically past. For example, the junction between the thoracic and lumbar vertebrae [...] is the great zone of transit between the gill-breathing fish and the air-breathing amphibians with their respiratory rib-cages, the very junction where we stand now [...] between the Paleozoic and the Triassic Eras" (44). By focusing on the persistence of planetary history and biological memories in human bodies, the novel draws the attention to the interconnectedness of human and geological time and reminds of the fundamental role of the latter in shaping human embodiment and psychology. Therefore, Lye notes that the novel promotes a vision of the human as neither "master of victim of natural forces but as a living archive of deep time" (Lye in Davis eds. 2018, 14). As unconscious biological memories of past geological epochs reemerge and disrupt their sense of self, the characters are forced to adjust their understanding of human time and align to the slower temporality of their environment. Thus, the doctor reminds us that "the brief span of an individual life is misleading. Each one of us is as old as the entire biological kingdom, and our bloodstreams are tributaries of the great sea of its total memory" (42). As a result, Kerans realises "he would then be abandoning the conventional

estimates of time in relation to his own physical needs and entering the world [...] where the massive intervals of the geological time-scale calibrated his existence. Here a million years was the shortest working unit” (48). This attention to inherited evolutionary time in our organism encourages a more layered understanding of human temporality that challenges the conceited definition of modern man. Furthermore, the novel takes its inspiration from Freud's theories to reconnect humans with their deep geological past.

Death Drive and the Return to Geological Temporalities

The novel links the characters' impulse to embrace the slower temporalities of species history to Freud's controversial theory of the unconscious death drive, which could be defined as the desire of every organism to go back to the selfless pre-organic state from which life originally emerged. The theory is impersonated by the protagonist whose urge to merge with his environment and surrender his human identity turns him into an archetypal embodiment of man's longing for a pre-organic state. This is explicitly exemplified when, while diving in a submerged planetarium, he unconsciously attempts to commit suicide, eager to become part of the aquatic world of his deep time memories. Once again, the novel reconnects human and geological temporalities through the metaphorical role of water. The submerged planetarium is compared to a uterus, further stressing the protagonist's impulse to return to the pre-organic state, described as a “dark vault with its blurred walls cloaked with silt [which] rose up above him like a huge velvet-upholstered womb” (111). Symbol of the prehuman world, the recurring metaphor of the water emphasises man's belonging to geological temporalities as placenta mammals coming from water. Indeed, we read later on that “the soothing pressure of the water penetrating his suit so that the barriers between his own private blood- stream and that of the giant amnion seemed no longer to exist. The deep cradle of silt carried him gently like an immense placenta” (112). Once in the water, the protagonist loses his ego, sense of self and human identity and finds himself to be but an extension of his environment. Thus, Kerans “stepped out into the lake, whose waters now seemed an extension of his own blood stream [...] he felt the barriers which divided his own cells from the surrounding medium dissolving” (71). Frederic Jameson notes that, through the experience of the protagonist, the novel pictures a dissolution of the human body in its environment, a loss of clear separation between the human and the nonhuman (Jameson in Hammond 2011).

In short, the novel challenges human exceptionalism by depicting the human as an evolving species among others, shaped by geological conditions and vulnerable to extinction. It questions short-

termist anthropocentric understandings of time through the consciousness of the protagonist whose deep connection with the changing environment leads him to abandon his narrow perception of human time and embrace geological temporalities. Moreover, its sustained attention to the slower planetary temporalities inscribed within the protagonist's body and mind invites the reader to think the human in geological terms. This perspective encourages to recalibrate our understanding of human temporal existence from the restricted historical and modern urban time to the slower temporalities of species history. In doing so, the novel clearly emphasises our entanglement with the natural world while challenging the conventional distinctions between the human and nonhuman.

III) Challenging conventional dualisms and hegemonic rationalism

Finally, I would like to suggest that the novel is not only ahead of its time in its anticipation of global warming and its attention to human existence on geological timescales, but also in its critique of some of the epistemological positions that would later come to be seen as the root of the ecological crisis. Environmental philosopher Val Plumwood stated that the solution to the environmental crisis was not entirely to be found in knowledge and technology but in changing our cultures to take into consideration our embeddedness in nature (Plumwood 2002). She urged to get rid of the nature/culture and mind/body dualisms inherited from Enlightenment rationalism that legitimise domination over anything it defines as closer to nature than reason. According to her, this rationalism has led to our hyper separation from nature and a false sense of our own autonomy that she refers to as 'disembeddedness'. Critics have argued that novels perpetuate this nature/culture binary, as they rely on anthropocentric conventions such the distinction between background and foreground where humans have the privilege of agency while the environment is deprived of it (ref).

In the novel, this distinction is reversed, since climatic and geological conditions are no longer the passive stable background of human history but an active foreground force in shaping it, the characters and the plot. The metaphorical role of the drowned city, for instance, highlights the vulnerability of modern urbanised societies and their embeddedness in the natural world. Symbol of the human world, the city returns to an organic state that bears no more nature/culture distinctions. The novel further defies these binary oppositions by showing both human bodies and minds as living records of planetary history evolving along with the changing climate. Since the boundaries between internal and external worlds are blurred and there is no struggle from the protagonists to resist change, there is no polarisation between subject and environment, no separation between

human and nonhuman. Once this distinction is unsettled, the characters are progressively stripped from the frameworks that define them as separate from the nonhuman. This approach allows the novel to challenge the ontological system that generated the boundaries between human and nonhuman, nature and culture.

Furthermore, Plumwood stated that the same rationalism at the origin of these binaries is intrinsically hegemonic and imperialistic since it seeks to universally impose its models (Plumwood 2002). One could argue that the novel anticipated her argument by depicting the collapse of this particular type of rationalism in the characters. Indeed, the novel links the transformation of familiar landscapes to the end of man's rational consciousness. The climate changed environment is portrayed as deeply challenging to the characters as it can no longer be understood through the rational frames of references supporting their outdated worldviews. Kerans' psychological transformation "reminded [him] of the slackening metabolism and biological withdrawal of all animal forms about to undergo a major metamorphosis, [...] a careful preparation for a radically new environment, with its own internal landscape and logic, where old categories of thought would merely be an encumbrance" (13). Moreover, according to Frederic Jameson, the post-apocalyptic theme of the novel could also be linked to the recent fall of the British empire, which is crystallised in the portrayal of collapsed London, former centre of power and symbol of imperialism (Jameson in Hammond 2011). Likewise, Roger Luckhurst argues that the novel dramatises the collapse of the imperial mindset and of the confidence in technoscience, whose authority was shaken after Hiroshima (Luckhurst 1997). According to Rob Latham, this critique makes it one of the first anti-hegemonic eco-disaster stories of the 1960s (Latham 2007). On a similar note, Plumwood stressed that the popular rationalist solutions to the ecological crisis, such as the technological fix for instance, do not attempt to rethink the culture and lifestyle that generated it (Plumwood 2002). It could be said that the novel foresaw this concern, since it attracts the attention to the fact that ecological events such as climate change exceed the grasp of human scientific understanding and technological power. The scientific mission turns out to be a failure, which underlines the contrast between the slow-paced methods of science and policy that privilege hypothesis before action and the fast and visible progression of global warming depicted in the novel. In Kerans' words, "the biological mapping had become a pointless game [...] and he was sure that no-one [...] bothered to file his reports, let alone read them" (3). Therefore, the novel's failed monitoring of climate change could be seen as a warning not to rely solely on science to take us out of the environmental crisis.

Conclusion

To conclude, the novel's prescient engagement with global warming takes its reader on a journey through deep planetary time, inviting to adopt, through the evolving consciousness of the protagonist, a broader perspective on our temporal existence as humans. Foreshadowing what Elizabeth Ellsworth calls the “realignment of our notion of temporal dwelling as humans” introduced by the Anthropocene, it reconnects human and geological temporalities and encourages to see them as deeply intertwined (Ellsworth 2012, 53). In doing so it offers an alternative to the harmful short-termism of current capitalistic societies and unsettles the conventional anthropocentric binary distinctions on which they rely. This approach undermines the driving narratives of modernity such as the myth of unlimited technological progress and human exceptionalism. Human and geological time meet in the liminal zone of the flooded city and are synchronised in the protagonist's intimate relationship with his environment. Portraying the simultaneous transformation of the landscape and the characters allows the novel to present the human as first and foremost an evolving species among others shaped by and dependent on climatic conditions, thus stressing its entanglement in the natural world. Finally, this focus on the protagonist's experience allows it to bring the massive timescales of geology into the intimate locus of the human body and mind, which participates in making geological temporalities intelligible to our human understanding of time in the restricted form of the novel. Indeed, like many climate fictions that make the changing environment the basis for the personal development of the characters, the novel participates in closing the gap between the intimate experience of the individuals and the global fate of the planet. In short, as Clarke suggests, the novel warns us that if the climate changes, so must we, which makes it still extremely relevant to our present day context (Clarke 2013).

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