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Stolen futures: the Anthropocene in Australian science fiction mosaic novels

Abstract:
Commentators such as Naomi Klein (2016) and Kim Stanley Robinson (2015) have warned that a failure now to adequately address anthropogenic climate change is an act of intergenerational theft. So great are these man-made impacts the term Anthropocene has been suggested to delineate a new epoch in the planet’s history. Australian writers are using science fiction and cli-fi, or climate fiction, to examine possible conditions faced by future generations that reflect on our current approach to the phenomenon. This paper argues that the mosaic novel, in concert with a science-fiction approach, is particularly well suited to this task in its use of interlinked short stories as a reflection of the complex elements of global climate change. My mosaic novel, “Watermarks”, being written as part of my PhD in creative writing, is set in near-future Brisbane. It draws attention to what has been identified as a relatively neglected topic in climate fiction: mitigation (Clode and Stasiak, 2014; Jordan, 2014). “Watermarks” uses a bricolage method in its construction, which also has resonance for the amorphous, interwoven aspects of anthropogenic climate change. The book adds to the small canon of other Australian writers who have used the science fictional mosaic to present visions of future life in the Anthropocene: Sue Isle’s Nightsiders (2011); James Bradley’s Clade (2015); and Steven Amsterdam’s Things We Didn’t See Coming (2009).

Bibliographical note:
Jason Nahrung, a Ballarat-based journalist, editor and writer, is undertaking a PhD in creative writing at The University of Queensland. His MA in creative writing from QUT explored Australian vampire Gothic. While he writes across the gamut of speculative fiction, all four of his novels and most of his 20-odd short stories lean towards the dark side.

Keywords:
Anthropocene, bricolage, science fiction, mosaic novel, climate change
Introduction

I was born at the end of the 1960s, and so have grown up with climate change: the predictions of its effects, its observable impacts on our environment, the recalcitrance of governments to address it. My entry into the official conversation can be marked by my short story “Watermarks” (2014), which imagined a near-future Brisbane beset by the effects of advanced anthropogenic climate change. This story, however, concentrates on the negatives: there is very little for my protagonist to do but mourn and survive, and only a few aspects of how the city might be affected are canvassed. How best to expand that story, I wondered, without sending the reader into denial due to fear, disbelief or helplessness in the face of the enormous, complex challenge of climate change? How to breach the cognitive dissonance, to show that, while the world may change, mitigation and adaptation may yet save the planet from the most apocalyptic of predictions?

My answer is being explored through practice-led research in the form of a PhD in creative writing, consisting of two interrelated elements: “Watermarks” [1], a mosaic novel of about 60,000 words, and an exegesis of about 20,000 words. Both elements use bricolage to assemble their cohesive wholes from a combination of autonomous but interlinked parts – a technique that has a thematic echo in the exploration of climate change. The mosaic, made up of ten to twelve autonomous but interconnected short stories, is both climate fiction and science fiction (SF or sci-fi). The novel examines and demonstrates how these genres, when combined with the mosaic form, provide a valuable tool for making the massive and complex phenomenon of climate change more approachable. Three other Australian climate mosaics have employed a science fiction lens: the dystopia of Sue Isle’s Nightsiders (2011); the pan-generational view in James Bradley’s Clade (2015); and the journey of an unnamed protagonist in Steven Amsterdam’s Things We Didn’t See Coming (2009). “Watermarks” adds a new angle to these approaches.

Climate change

While climate change can be a natural process, the term has come in recent decades to be a popular reference for anthropogenic alteration of the Earth’s climate, in particular those changes caused by global warming (the raising of the average temperature of Earth). This warming is largely due to an excessive build-up of greenhouse gases, such as carbon dioxide, which trap heat in the atmosphere (the greenhouse effect), due in large part to the use of fossil fuels (Maslin 2009: 1). So great and rapid have these changes been that in 2000 Nobel Prize-winning scientist Paul Crutzen suggested humanity had brought about a new geological age in Earth’s history: the Anthropocene. This paper, concerned with human impacts on the environment and consequent environmental impacts on humans, uses the term “climate change” in this anthropogenic context.

The continued warming of the planet, which research suggests is already disrupting “normal” weather patterns, is predicted to further alter Earth’s climate through dramatic effects such as
rising sea levels, altered climatic zones and melting ice caps and glaciers (IPCC 2014; Flannery 2007; Garnaut 2008; Whitaker 2010). Despite widespread scientific and growing political acknowledgement of climate change, there is a body of sceptical resistance (Dupont & Pearman 2006: 19–24), as demonstrated by the Australian Abbott Government’s opposition to mitigation (Kenny 2014). Part of “Watermarks” raison d’être is to challenge this scepticism, using the tools and properties of science fiction.

Science fiction, climate fiction

Climate change has increasingly become a topic for fiction writers (Johns-Putra 2016: 266) both on the big screen, most notably The Day After Tomorrow (2004), and in books such as Barbara Kingsolver’s Flight Behaviour (2012), the sceptical State of Fear by Michael Crichton (2004), Paolo Bacigalupi’s The Water Knife (2015) and Margaret Atwood’s MaddAddam series (2003, 2009, 2013). Not surprisingly, Australian writers have also addressed climate change – our country is considered highly vulnerable due to its variety and variability of weather patterns, a population clustered along the coast, delicate environments such as the rainforests of Far North Queensland and the Great Barrier Reef, and reliance on marginal land and irrigation for food production (Flannery 2007; Henderson-Sellers 1989; Lynas 2007, 2011). Key Australian novels reflect the spread of climate fiction: contemporary literature such as Tim Winton’s Eyrie (2013) and Anson Cameron’s satirical The Last Pulse (2014); First Nations SF by Peter Docker (2011); thrillers from Ian Irvine (2000) and LA Larkin (2012); the adult dystopia of Hillary James (2015); George Turner’s SF (2012); and young adult dystopia of Gabrielle Lord (1990) [2].

In 2007, Daniel Bloom proposed the term climate fiction, or cli-fi (or cli fi), as an umbrella term to draw attention to such broad fictions all sharing a common concern with anthropogenic climate change, “a fiction genre that might be helpful in waking people up and serving as an alarm bell” (in Holmes 2014), regardless of their other genre affiliations.

Bloom said the genre was a work in progress, that “(n)ovelists, screenwriters, literary critics, and academics will determine what makes cli-fi in an organic way over the next 100 years” (in Holmes 2014). With the seepage of various aspects of climate change and adaptation into a broad range of fiction as noted by Adam Trexler (2015: 15) and a “dramatic diversification among fictional responses” since the 1990s (Clode & Stasiak 2014: 24), I suggest that cli-fi is best suited to describing those fictions – such as “Watermarks” – that actively discuss the phenomenon and humankind’s response to it, rather than those merely using it as a background to a more primary narrative. As we progress further into the Anthropocene, however, the literature’s purpose will be less that of ringing alarums than in presenting coping mechanisms – both of these themes are present in “Watermarks”.

The cli-fi term is not without its shortcomings – the abbreviation’s similarity to sci-fi suggests a limiting association, for instance. Bradley argues that the broad body of work dealing with this growing awareness of our relationship with nature may transcend genre.
(2015b). These weaknesses aside, cli-fi is a useful space in which to examine how writers of all genres are addressing this era of dramatic transformation. This helps a practitioner such as myself to explore the most pertinent work that has gone before and find a point of difference while adding to this ongoing conversation.

**Science fiction and estrangement**

“Watermarks” falls firmly within the climate fiction field, as well as being science fiction. Darko Suvin defines science fiction as “a developed oxymoron, a realistic irreality” (1979: viii) because it causes cognitive estrangement in the consumer. The fictional world “estranges” the consumer’s understanding of the known world by presenting a possible but fantastical element (a novum). Building on this, M. Keith Booker and Anne-Marie Thomas acknowledge the difficulty of defining the complex genre of SF, due in part to its long evolution and the role of cognitive estrangement in all fiction (2009: 3–4). They define SF as “fiction set in an imagined world that is different from our own in ways that are rationally explicable (often because of scientific advances) and then tend to produce cognitive estrangement in the reader” (2009: 4). The emphasis on fractured reality establishes science fiction’s speculative nature, while the elements of explicability and technology are key in differentiating SF from other strands of speculative fiction [3] such as fantasy and horror, which often come with their own challenges of definition.

Cognitive estrangement is an important aspect of my design for “Watermarks”, which is driven in part by frustration at continued denialist rhetoric and government inaction. Cognitive estrangement may break through this cognitive dissonance, as Paik (2010: 2) and Schmidt (2014: 872), amongst others, suggest. Providing a picture of a possible world to come might encourage critical thinking (Krznaric 2010: 155) and engender empathy for the generations who will have to cope with the unravelling of climate as we know it (Krznaric 2010: 162). The sheer size of climate change, in terms of global impact and temporal reach, makes such long-term reasoning difficult. In introducing his climate fiction anthology *Loosed Upon the World*, editor John Joseph Adams says:

> One of the many problems we face is simply in popular comprehension. It’s hard to imagine how a two-degree increase in the average global temperature could possibly affect you or me ... It all feels distant, either in space or in time – something that’s affecting someone somewhere far away, or will affect a future generation as yet unborn. But that sense of distance is a false one. It’s happening now, and we will feel the affects (sic) in our lifetime. (2015)

Timothy Morton posits that climate change is a hyperobject – “(a thing) massively distributed in time and space relative to humans” (2013: 1), which Robert Macfarlane describes as
“(defying) our perception, let alone our comprehension” (2016). To counter this overwhelming object, Morton proposes that, “We need art that does not make people think (we have quite enough environmental art that does that), but rather that walks them through an inner space that is hard to traverse” (2013: 184). Science fiction can do both, simultaneously, by fostering empathy with people in future scenarios that in turn reflect on our current experience of, and reaction to, climate change. The very structure of the mosaic novel lends itself to this role through its application of bricolage – taking elements from the disassembled hyperobject and reassembling them into a cohesive, approachable story world.

Mosaic novels

The term “mosaic novel” is a loaded one, a descriptor that is not widely used in discussions of the form. Since Forrest Ingram offered the first comprehensive study of the mosaic form in 1971, numerous titles have been offered to accommodate the form’s place if not between then beside the short story and the novel. A few key descriptors have arisen since Ingram championed the term “short story cycle”. Robert M Luscher suggested, in 1989, “short story sequence”, and in 1995, Maggie Dunn and Ann Morris moved away from the short story altogether and argued for “composite novel”. In 1999, Rolf Lundén added his weight to the camp of the “short story composite”. These definitions tend to focus on the ways in which a) the stories cohere to transcend the properties of a collection and b) the connotations the titles hold, such as a linear or cyclical shape to the narrative, and/or preferencing of the parts (short stories) or the whole (novel, composite). There is consensus, however, regarding the underlying principal that governs the operation of this form, with Dunn and Morris offering a solid base definition:

The composite novel is a literary work composed of shorter texts that – though individually complete and autonomous – are interrelated in a coherent whole according to one or more organizing principles. (1995: 2)

Two guiding principles in “Watermarks” are the use of recurring characters as a “composite protagonist” and the common temporal and geographic setting. Also, the book uses repeated references to water and drought to aid symbolic cohesion. Whether this qualifies the book as a “novel” is open to debate against the background of academic inquiry assayed here (and indeed, the perceptions of possible publishers and readers), but I use the “mosaic novel” descriptor in this paper as a best fit term. The key from this analysis is that the texts, when read together, make a whole that is bigger than the sum of their parts – “the features of unity distinguishing it from the collection” (Lundén 1999: 14). While each story offers its own self-contained narrative, when combined they interact to form a larger, more complex world. This mirrors the web of interactions that make up environments at all levels, and the complex interactions that are involved in climate change.

Australian SF mosaic climate change novels

The mosaic form has been used in combination with SF by three aforementioned Australian writers to examine the Anthropocene: Amsterdam’s *Things We Didn’t See Coming*, Isle’s *Nightsiders* [4] and Bradley’s *Clade*. Each of these texts employs a different narrative approach within the mosaic framework. *TWDSC* tracks an unnamed protagonist through a series of contrasting adventures over an approximate twenty-five year period and through an unnamed country riven by ecological disaster and social breakdown. There are signs of overarching government and a reestablishment of accessible technology – the protagonist is treated for health issues, for instance, and the final story involves him acting as a tour guide to jet-setting terminal patients. The book enacts a cyclical recall by ending with the father introduced in the first chapter. *Nightsiders* uses different protagonists to explore its dystopian setting, a Perth largely abandoned due to war and ecological collapse and with limited technology for those few who stayed behind. A new generation of mutated humans is adapting to a high-UV, low-rainfall world. In “Nation of the Night” a character travels to a flood-stricken Melbourne where they undergo gender reassignment surgery. There is, in the final story, a suggestion of mixing First Nations and post-colonial knowledge to improve survival chances. *Clade* is perhaps the most optimistic of the trio. It traces a broadly defined family through events such as bird extinction, refugee and health crises, flood-devastated England and a global plague. The idea of the Anthropocene as a time of transition, not an ending, is repeated, with *Clade*’s final story suggesting a technological resurgence – fish adapted for an ocean warmer and more acidic than at present, and a hopeful vision of the deep future where aliens may be present. Along the way, there are glimpses of adaptation and mitigation such as electric cars and trees modified for carbon sequestration.

Each book uses a chronological timeline and recurring characters as part of their mosaic form. That sense of unity is enhanced in *Clade* by the network of characters anchored around the central figure of Adam, beginning with the impending conception through IVF of his child and ending with his reported death. *Clade* also employs a cyclical device, opening and ending on beaches. *TWDSC* traces its protagonist from teenagehood to his apparent death, although the tactic of leaving the protagonist unnamed erodes this cohesion. In *Nightsiders*, a common geographic setting, reinforced by the contrast of the Melbourne excursion, enhances the sense of unity. To this trio, “Watermarks” – still a work in progress – brings a new combination of approaches: themed stories, multiple points of view, and temporal and geographic proximity, as well as its focus on mitigation – carbon capture activities such as kelp farming, reducing methane production in livestock, and phasing out fossil fuels. Mitigation has been identified by Danielle Clode and Monika Stasiak (2014: 26), and Deborah Jordan (2014: 9), as an often overlooked aspect of climate fiction, one that Jordan finds is more the domain of scientific and political discussion (2014: 7). Mitigation and adaptation, as sources of achievable hope, balance the potential paralysis and despair that Krznaric warns can be generated by dystopic visions (2010: 163). The mosaic, with its ability to use numerous point-of-view characters to highlight various themes while maintaining a
cohesive world view without recourse to the traditional novel’s “coherent narration and closure” (Lundén xxx: 13), has much to offer in this balancing act.

**Why the mosaic novel?**

The mosaic form offers a way of breaking the nebulous and complex phenomenon of climate change into more manageable pieces. Michael Trussler notes, “(S)hort fiction accentuates a single event, as opposed to the novel’s propensity to knit numerous events together in a serial fashion” (1996: 558). The mosaic novel can accentuate single events “knitted” into a bigger, more cohesive picture. This tension of fragmentation and unity – what Lundén describes as centrifugal and centripetal narrative forces (2014) – makes mosaics an ideal vehicle for conveying, Michelle Pacht argues, “a struggle to define and understand the always-changing world in which their characters live” (2005: iv). She continues:

> The story cycle ... can exploit the short story’s attention to an individual character and combine it with the novel’s more expansive look at society as a whole. These texts can therefore highlight isolated events and the collective ramifications of those events at the same time. Because meaning exists in the spaces between the text-pieces – those invisible threads which link them to one another – the cycle’s structure demands that much of the interpretive work be done by the reader. (2005: 172)

The gaps between the short stories is one of the inherent characteristics of the mosaic form, and play an important part in the reader’s relationship with the text. Angela Slatter calls them “liminal spaces ... where further story, the story that occurs before the opening sentence and after the last full stop, is withheld from the reader”, and contends that “a skilful writer will be able to hint at what lies within the abyss” (2012: 284). The gaps are, Lundén asserts, “not to be regarded as passive states of absence but rather as dynamic narrative components” (2014: 59).

Catherine McKinnon identifies similar fertile purpose in these gaps in her examination of translit stories, a term she ascribes to Douglas Coupland (2012). She describes translit as “multi-narration [autonomous stories, not necessarily a straight polyphonic story] novels that surf time, genre hop and skip geographical location”, and offers *Things We Didn’t See Coming* as an example (2014: 1). McKinnon’s and Coupland’s descriptions of translit locate it firmly within the mosaic form. In the spaces between the short stories, McKinnon argues,
attention to; an imagining that drifts up from the spaces, gaps, voids, that are left between the stories. (2014: 20–21)

*Clade* and *Things We Didn’t See Coming* both have gaps spanning years between their stories as their characters move forward in time. In *Nightsiders* the time jump is less pronounced. The stories within “Watermarks” take place in a more condensed time period. Still, they invite the reader to explore the before and after of each story, and in so doing recognise the often unstated connections between my near-future story world and the current “real” world – to recognise how my imagined future may be a plausible potential outcome of our actions in the past, present and near future. The reader can also bridge these narrative gaps by inference and extrapolation, tracing characters such as mudlark Kat without my having to explicitly fill in the transitions in their lives. This allows a purposeful focus within the short story while inviting the reader to be involved in the broader storytelling.

Another thematic strength of the mosaic, identified by Susan Garland Mann (1989), is that, “because cycles consist of discrete self-sufficient stories, they are especially well suited to handle certain subjects, including the sense of isolation or fragmentation or indeterminacy that many twentieth-century characters experience” (qtd. in Lundén 1999: 23). Isolation and indeterminacy are evident in all three Australian mosaic novels as isolated characters seek community or belonging in their challenging worlds; ways to exert influence in worlds that can present as being beyond further human influence. These forces are close to the heart of “Watermarks”, too, set as it is in a changing environment potentially inimical to human life (and indeed to much of the natural living world as we know it). This movement from isolation and helplessness towards community and agency, reflecting the creation of unity from separate stories, further reinforces my feeling that the mosaic carries in its very structure some of the core themes I am working with.

**Bricolage as guiding principle**

Adding to this thematic resonance is the underlying methodology of bricolage, which in this literary application offers a thematic and structural practice well suited to the complex process of climate change and mosaic fiction. The creative work draws on news headlines and non-fiction publications from a broad range of fields, including sociology, economics, technology, energy production, transport systems and politics, and the many sciences of climate change, from philosophy to chemistry and oceanography, ecology and geography. It also surveys other climate fiction, and applies a spread of critical access points to the topic, including cognitive dissonance, cognitive estrangement, ecocriticism, and facets of science fiction such as dystopia, utopia and apocalyptic fiction.

Bricolage as an artistic practice has developed from the theory espoused by Claude Levi-Strauss, in which he proposes “two strategic levels at which nature is accessible to scientific inquiry: one roughly adapted to that of perception and the imagination: the other at a remove...
from it” (1966: 15). The scientist (or engineer), he says, uses structures to make events; the bricoleur uses events to make structures (1966: 22). The bricoleur “makes do” with

‘whatever is at hand’, that is to say with a set of tools and materials which is always finite and is also heterogeneous because what it contains bears no relation to the current project, or indeed to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock or to maintain it with the remains of previous constructions or destructions. (1966: 17)

While not all of my materials are as unrelated as this quote suggests, I appreciate, and indeed am aesthetically and thematically drawn to, the notion Levi-Strauss introduces here of using what amounts to debris – “the remains of previous constructions or destructions” – as not only a nod to literary antecedents but as a symbol of writing about a climate change future. Construction and destruction apply to a range of social, economic and technological patterns of behaviour that have been created, ended or modified by the realities of the Anthropocene, as well as to the notion of building a new city on the “ruins” of what has come before. The resulting short stories do not just build on the past (predominantly our present), however, but on each other in an iterative process of discovery and revision. This interplay of connections helps to form the mosaic. Norman K. Denzin and Yvonna S. Lincoln, having identified several approaches to bricolage, highlight the synchronicity between bricolage and the mosaic novel that encapsulates my ambition for “Watermarks”: “the interpretative bricoleur produces a bricolage – that is, a pieced-together set of representations that is fitted to the specifics of a complex situation” (2014: 4). This synchronicity is further reinforced by Anne-Marie Boisvert, who talks of disassembly and reassembly as a way of dealing with complex issues. She writes:

(T)he bricoleur seeks above all (more or less consciously) to preserve the qualitative complexity of the world by transposing this complexity onto structures of components with diverse and subtle relationships. This complexity is sacrificed by the scientific mind in favour of intelligibility. The bricoleur thus displays concern for recuperation, and thereby responds to a profound need: that of creating meaning through reassembly, by (re)organising and weaving meaningful relationships among apparently heterogeneous objects. (2003)

This recuperative aspect and creation of unity through linking heterogeneous objects – short stories drawing on a variety of influences within fiction, non-fiction and criticism – is at the very heart of my vision for “Watermarks”, using a bricolage framework “to see the world as it could be” (Kincheloe 2005: 346). The novel’s focus on mitigation helps it to add to the
conversation occurring in *Clade*, *Things We Didn’t See Coming* and *Nightsiders*. “Watermarks” uses the disassembly and reassembly offered by the mosaic novel driven by a bricolage methodology to make climate change more accessible. The novel uses the cognitive estrangement of science fiction to not only reinforce a well-established sense of peril but to suggest ways forward. If, as Elizabeth Boulton attests, “Humanity will never be able to defeat a threat it cannot perceive” (2016), then “Watermarks” is an attempt to put a human face on the Anthropocene, to draw our changing climate within the limits of perception, and to encourage action now to ease the way for future generations.

**End notes**

1. “Watermarks” refers to the novel unless stated otherwise.
2. See Jordan (2014) for a valuable survey of Australian climate fiction to 2014.
3. “Speculative fiction” is also a term open to interpretation (Nicholls 2015).
4. At about 40,000 words, *Nightsiders* is more accurately a novella than a novel, as Monika Stasiak notes (2012: 1), but embodies the mosaic form. Gerald Kennedy sets three stories as the minimum for a short story sequence (1995: ix) – *Nightsiders* has four.

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