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Notes

Introduction

- 1 See Bate (2000: 95–98) for a discussion of ‘Darkness’ in relation to the eruption of Tambora.
- 2 See Beer (1989).
- 3 Even though the French mathematician John-Baptiste Joseph Fourier first suggested man-made – anthropogenic – climate change in 1824, its scientific study didn’t receive much attention until after the Second World War. Changes in the climate were instead attributed to changes in solar energy, the amount of volcanic dust in the atmosphere or variations in the elevations of continents (Plass, Fleming and Schmidt 2010: 58). In the 1950s the Canadian physicist Gilbert Plass challenged these ideas and suggested that scientists had to re-evaluate the role of carbon dioxide in climate change. The theory that carbon dioxide might influence the climate was first proposed by John Tydall in 1861, yet had not been much discussed until Plass’s research nearly a century later.
- 4 Painter and Gavin discovered an increase of climate scepticism in the period between November 2009 and February 2010, and between November 2010 and February 2011. They suggest that the increase in the first of these two periods can be related to ‘Climategate’ in late 2009 and the discovery of errors in the 2007 IPCC report. In the latter period, no such events took place and Painter and Gavin attribute the increase of sceptical voices to the predominance of climate scepticism in two newspapers, *The Express* and *The Telegraph* (2016: 447).
- 5 Of course, it is difficult to connect individual events to climate change. Nonetheless, the likeliness of floods becoming more common in Britain as climate crisis worsens would invite a link between floods and climate change in newspaper reporting.
- 6 Rosemary Randall suggests that the splitting that happens in cognitive dissonance protects people ‘from the need to truly face and mourn the losses associated with climate change’ (Randall 2009: 118).
- 7 In an article for *The Guardian*, Alison Flood cites several authors, including Philip Pullman and Sadie Jones, on the difficulties of writing about climate crisis (2010).

- 8 As Ursula Kluwick puts it, 'climate change discourse permeates our culture' (2014: 505).
- 9 Increasingly, research is done on the effects of climate crisis films and documentaries on people's awareness and their willingness to act. See, for instance, Lauren Griffin and Ann Christiano, 'Why "Sharknado 4" matters: Do climate disaster movies hurt the climate cause?' (2016). Mike Hulme cites research that showed that amongst viewers of *The Day After Tomorrow* 'any increase in concern about climate change induced by the film appeared short lived, with most viewers treating the film purely as entertainment' (2009: 213).
- 10 Similarly, *Time* turned their cover's characteristic red border green in honour of Earth Day 2008 and in 2007, 2008 and 2009 compiled an annual list of 'Heroes of the Environment'.
- 11 As Adiseshiah and Hildyard note, 'research in the field of twenty-first century fiction is already rich, diverse and abundant, but is as yet largely unreported and unrepresented in academic discussion' (2013: 4). In addition to their edited collection *Twenty-First Century Fiction: What Happens Now* (2013) and Peter Boxall's *Twenty-First-Century Fiction* (2013), another example of scholarship on postmillennial fiction is *Twenty-First-Century British Fiction* (2015), edited by Bianca Leggett and Tony Venezia.
- 12 According to Boxall, twenty-first-century literature is characterized by three preoccupations: shifted temporalities; the real and new kinds of realism; and embodiment (2013: 9–11).
- 13 A similar point is made by Trexler when he suggests that '[t]he imaginative capacities of the novel have made it a vital site for the articulation of the Anthropocene' (2015: 23). In the same vein, Peter Boxall notes that the novel produces 'new perspectival forms with which to picture the world' (2013: 7).
- 14 See, for instance, Hoving (2010).
- 15 Visit Britain's Great Britain Tourism. Survey shows that the seaside is the most popular holiday destination for domestic travel, followed by the countryside (n.d.).
- 16 Markkhu Lehtimäki makes a similar point when he suggests that 'the narratological mainstream still tends to foreground fictional minds and imaginary storyworlds' (2013: 119) and that 'ecocriticism is too often preoccupied with the domain of nature to linger on the specific affordances that fictional narratives provide when it comes to imagining and situating oneself within suprahuman ecologies' (2013: 120).
- 17 Herman's own work is a good example of a narratological discussion more sensitive to space and environment. See especially *Story Logic* (2002).

- 18 See, for instance, Lehtimäki (2013) and James and Morel, forthcoming.
- 19 In 'Problems in ecocriticism and the novel' Head argues that the novel is ill-suited to ecocriticism because of the genre's focus on personal development, personal time and personal growth (1998: 65).
- 20 See, for instance, Scott (2012), Kostkowska (2013), Brazeau and Gladwin (2014), McCarthy (2015) and Sultzbach (2016).
- 21 The work of Deborah Lilley on contemporary pastoral forms a notable exception to the ecocritical neglect of twenty-first-century British fiction (Lilley 2016). See also my proposal for an ecocriticism more inclusive of contemporary fiction (Bracke 2010) and my discussion of the challenges of the contemporary British novel to ecocriticism (Bracke 2014b).
- 22 See, for instance, the special issue of the *Oxford Literary Review* (34.2 [2012]), edited by Timothy Clark on deconstruction in the Anthropocene, Adam Trexler's *Anthropocene Fictions*, Timothy Clark's *Ecocriticism on the Edge* as well as numerous conferences and special issues on the topic.
- 23 The media statement issued by the working group on the Anthropocene sketches the process that now follows before the concept can indeed become part of the geological timescale: once a specific date and site that demonstrate the beginning of the Anthropocene has been determined, a proposal would be put to

our immediate parent body, the Subcommittee on Quaternary Stratigraphy (SQS), on defining a formal Anthropocene unit. If the SQS recommends this by supermajority vote, the proposal will go on to its parent body, the International Commission on Stratigraphy (ICS) to be voted on, with any vote in favour still needing to be ratified by the Executive Committee of the International Union of Geological Sciences (IUGS). (Anthropocene Working Group 2016: n.p.)
- 24 In early 2017, Owen Gaffney and Will Steffen proposed the 'Anthropocene Equation' in which human-induced change has become dominant in influencing the earth's processes (see Gaffney and Steffen 2017).
- 25 In deciding on the term 'climate crisis', I also decide against using 'climate change'. While I use the latter phrase occasionally, it is not the key concept of this book, as the title demonstrates. Indeed, there's much to be said for using climate crisis at this particular juncture in history, rather than the much more benign-sounding 'climate change'. Anabela Carvalho notes how the US administration replaced 'global warming' by 'climate change', as the former was seen as too alarmist (2005: 7). Of course, 'global warming' is also inaccurate, as it does not

account for all the extreme weather that climate crisis causes, including heavier snowfall in some parts of the world.

- 26 Focusing on space and time in this manner foregrounds the narratological dimension of the novels, provides a link between ecocriticism and narratology and exemplifies the centrality of space and time to twenty-first-century fiction in general (Boxall 2013: 5, 7).

Chapter 1

- 1 For an extensive discussion of climate fiction, see Adam Trexler 2015. For an econarratological reading of Kingsolver's *Flight Behaviour* and Rich's *Odds Against Tomorrow*, see my 'Worldmaking environmental crisis: climate fiction, econarratology and genre' (forthcoming).
- 2 See Lorenzo DiTamasso 2014 on the apocalyptic narrative in popular culture.
- 3 *Cloud Atlas* in particular has been read as an apocalyptic narrative (cf. Bayer 2015; Hicks 2010; Ng 2015).
- 4 For a discussion on the difficulties on narrating a world without people, see Garrard (2012).
- 5 A similar argument is made by Astrida Neimanis, Cecila Åsberg and Johan Hedrén in their discussion of possible directions of the environmental humanities (2015: 73).
- 6 As alternatives to conventional narratives, scholars have suggested the database (Heise 2016: *passim*) or techniques of modernist cut-up and collage (Kerridge 2014: 373).
- 7 A case in point is Clark's argument that 'the main artistic implication of trying to represent the Anthropocene must be a deep suspicion of any traditionally realist aesthetic' (2014: 81).
- 8 This calculation depends on when the great-grandfather was born and the length of a generation. If Sister's great-grandfather was twenty years old in the middle of the Second World War, 1943, and he had a child at age thirty, Sister's grandfather was born in 1953. If he too had a child at age thirty, Sister's father was born in 1983, and she – provided she was born when her father was thirty years old – born in 2013. An alternative would be to pick the longer period for a generation, of thirty-five years. Starting with the premise that great-grandfather was twenty in 1943, Sister's grandfather would have been born in 1958, her father in 1993 and she in 2028. In *The Carhullan Army*, Sister seems to be a young woman of

- childbearing age, who has work experience and has been with her boyfriend for several years. If she is thirty years old, the temporal setting of the novel would be 2043 at the earliest (if generations are twenty years long) and 2058 the latest (if a generation is thirty-five years long). Generation lengths are suggested by the International Society of Genetic Genealogy.
- 9 These calculations take Sister's age during the walk with her father around age ten.
 - 10 Carhullan comes to represent, according to Lilley, 'an awareness of the realities of the cultural and ecological landscapes of the present moment, coupled with the possibility that things could be otherwise' (2016: 67–68).
 - 11 Robert Frobisher describes the musical piece he is composing as a 'sextet for overlapping soloists', a term that aptly describes the novel's structure.
 - 12 Hicks bases part of her argument on the work of Mircea Elide and asks the rhetorical question, '[i]f a linear conception of time is contributing to humanity's apocalyptic tendencies, why not revert to the cyclical understanding of time that structured human consciousness for millennia?' (2010: par. 4).
 - 13 His reading of the novel echoes observations by Ulrich Beck, on risk society (1986: *passim*), and Frederick Buell's argument that apocalypse has become 'a way of life', rather than something to be anticipated in the future (2003: *passim*).
 - 14 Earlier, Jerome Bruner argued that 'we organize our experience and memory of human happenings mainly in the form of narrative – stories, excuses, myths, reasons for doing and not doing, and so on' (1991: 4).
 - 15 The six different genres are a diary (Adam Ewing), letters ('Letters from Zedelghem'), crime novel (Luisa Rey), memoir (Timothy Cavendish), a filmed interrogation (Sonmi~451) and an oral narrative ('Sloosha's Crossin').
 - 16 Incidentally, Scott Dimovitz suggests that language 'is ideological power, and throughout *Cloud Atlas* characters are haunted by the fear of losing voice' (2015: 74).
 - 17 Narrative instability is also created in other postmillennial novels in which knowledge and narratives are lost, for instance, Clare Morrall's *When the Floods Came* (2016), and narrative manipulation is central to Antonia Honeywell's *The Ship* (2015).

Chapter 2

- 1 Dana Phillips's *The Truth of Ecology* (2003) is one of the most extensive critiques of pastoral. See also the chapter on pastoral in Greg Garrard's *Ecocriticism* (2011).

- 2 The end of pastoral is also proposed by John Barrell and John Bull who suggest the end of the separation between country and city in the nineteenth century was also the end of pastoral: 'The separation of life in the town and in the country that the Pastoral demands is now almost devoid of any meaning. It is difficult to pretend that the English countryside is now anything more than an extension of the town' (1974: 432).
- 3 As Alpers writes, 'it is the representative anecdote of shepherds' lives that makes certain landscapes pastoral' and that 'we may say that landscapes are pastoral when they are conceived as fit habitations for shepherds or their equivalents' (1982: 459).
- 4 A similar argument on the adaptability of pastoral underlies the collection *New Versions of Pastoral*, in which David James and Philip Tew note that 'Arcadian and bucolic traditions are either misunderstood or misrepresented as simply a contraction into conservative nostalgia.... Nevertheless in origin and in practice the dynamics of pastoral texts are far more adaptable, capable as they are of fluid and complicated ideological negotiations' (2009: 13).
- 5 See Heise (2008) and Morton (2010).
- 6 It should be noted, though, that in his chapter on pastoral in *Ecocriticism* Garrard begins his discussion by suggesting that pastoral 'must and will remain a key concern for ecocritics' (2011: 37).
- 7 A small resurgence of pastoral's popularity amongst ecocritics has taken place in Early Modern and Renaissance studies. See, for instance, Todd Borlik (2011) and Ken Hiltner (2011).
- 8 Gifford emphasizes that post-pastoral is not a chronological term, but can refer to literature of any time period (2014: 26).
- 9 See Botkin (1992).
- 10 See Gifford (2013) and Gifford (2014).
- 11 In *Pastoral* Gifford provides a 'prefix-pastoral' list of his own that includes Freudian pastoral, the pastoral of childhood, revolutionary pastoralisms, proletarian pastoral and urban pastoral (1999: 4).
- 12 Indeed, the entire issue is devoted to pastoral.
- 13 Other examples of twenty-first-century ecocritical engagements with pastoral are Scott Hess's work on pastoral and advertising (2004) and a roundtable on pastoral held at the 2011 ASLE conference in Bloomington, subsequently published in the *Journal of Ecocriticism* (Lioi 2011).
- 14 Gifford echoes this in his discussion of retreat and return by identifying 'the essential paradox of pastoral: that a retreat to a place apparently without the

- anxieties of the town, or the court, or the present, actually delivers insights into the culture from which it originates. Pastoral authors are inescapably of their own culture and its preoccupations. Thus the pastoral construct always reveals the preoccupations and tensions of its time' (1999: 83).
- 15 In the urban chapter, which forms a counterpart to the present chapter, space is explored in more detail as central to the construction of the urban landscape.
 - 16 See, for instance, Johan Fredrik Rye (2011); Maja Farstad and Johan Fredrick Rye (2013).
 - 17 Interestingly, Gifford reads roughly the same period as demonstrating not the shift from a production landscape to a post-production or aesthetic landscape, but in terms of a shift from 'countryside' to 'environment', influenced by the rise of the British environmental movement (2016: *passim*).
 - 18 The novel explicitly states that Michael committed suicide in the night of Remembrance Sunday 1994 and that before this time the culling of their cows due to mad cow disease (BSE) had taken place. However, the massive outbreak of BSE which is usually remembered did not take place until March 1996. Nonetheless, the disease had been identified before – for the first time in 1984 – and localized outbreaks occurred before the one in 1996, including presumably the one on the Luxton's farm before 1994 (see Howkins 2003: 218).
 - 19 Per Krogh Hansen has also created his own distinction of various types of unreliable narrator (2007), as has Monika Fludernik (1999).

Chapter 3

- 1 Trexler notes that 'the vast majority of climate change novels are set in urban centers', the reason for this being that '[c]ities are, by definition, extraordinarily dense networks of affective bonds between people and place' (2015: 76).
- 2 See also Aidan While and Mark Whitehead (2013).
- 3 See Fairbrother (1970) and McHarg (1969).
- 4 For more work on urban environments and urban political ecology, see also Heynen, Kaika and Swyngedouw (2006); Cook and Swyngedouw (2012).
- 5 See Richard Lehan 1998 in which he argues that the rise of the city is inseparable from the development of the novel. Likewise Stuti Khanna has suggested that the city and modernism and postmodernism are 'not merely causal but fundamentally and mutually constitutive, in that one shapes the other, so that the city becomes a material register that articulates as well as

- dictates the assumptions, ideologies and visions that underpin Modernism and Postmodernism' (2013: 2).
- 6 For a thorough introduction to environmental justice, see Joni Adamson, Mei Mei Evans and Rachel Stein (eds) (2002).
 - 7 In their introduction to *In the Nature of Cities*, Heynen, Kaika and Swyngedouw criticize the environmental justice movement for not being political, or in fact, organized enough to lead to substantial change (2006: 9). Similarly, Cook and Swyngedouw argue that environmental justice is too localized and as such 'inadequate for understanding the production and contestation of environmental injustice' (2012: 1967).
 - 8 An argument made popular especially in Bill McKibben (1989).
 - 9 My readings in the following pages rely on an extension of ecocriticism through urban studies that I discussed at length elsewhere (Bracke 2013, 2014a). I have argued that '[e]xtending ecocriticism through urban studies results in a fundamental shift: whereas much ecocriticism and environmentalism remain premised on the image of an ideal nature – even if that has become unattainable – urban studies allows for a full and unprejudiced engagement with urban and humanized nature by focusing on the possibilities and engagements these spaces offer' (Bracke 2014a: par. 6).
 - 10 The classic definition of nature remains Kate Soper's three-part definition from her 1995 *What Is Nature* in which she distinguishes between nature as a metaphysical concept, 'through which humanity thinks its difference'; as a realist concept, to refer to the 'causal powers that are constantly operative within the physical world'; and as a lay or surface concept by which nature is used 'in reference to ordinarily observable features of the world' (1995: 156). Amongst ecocritics and environmental humanities scholars, Timothy Morton's *Ecology without Nature* is one of the most comprehensive challenges to the concept of nature as it is frequently used.
 - 11 While Urszula Terentowicz-Fotyga argues that the setting of Smith's *The Autograph Man* – the fictional suburb Mountjoy – demonstrates how in contemporary novels 'the city of places gives way to the "city of signs"' (2009: 307), the fictional location of a novel is not relevant for my purposes, as a storyworld need not have a real world referent in order to be accessible to readers, nor for it to possibly create greater environmental understanding.
 - 12 As William Frawley puts it in his discussion of topological and projective locations, 'Topology is the study of the geometric properties of objects that are invariant under change of the object' (1992: 254).

- 13 For an extensive discussion of place and place-attachment, see Thayer (2003).
- 14 The wilderness paradox similarly plays a role in polar narratives, as I discuss in Chapter 4.
- 15 Mabey defines the unofficial countryside as 'habitats which have grown out of human need' (2010: 20) to which 'the labels "urban" and "rural" by which we normally find our bearings in a landscape, just do not apply' (2010: 20).
- 16 Defined by Rachel Slocum as advocating 'more ecologically sound and socially just farming methods, food marketing and distribution and healthier food options' (2007: 522).
- 17 See, for instance, Georg Simmel (1910), John Kasson (1990) and Visser (1991), in which she writes that '[w]e should note the constant likening of rude people to animals, and remember that a universal purpose of good behaviour is to demonstrate how *unlike* beasts we mannerly people are' (1991: 63, original emphasis).
- 18 Similarly, Estok suggests that '[t]he simple assertion that bioregional is a good thing ... is not quite so simple' (2012: 682), an argument echoed by Jarosz: 'The assumption that local, alternative food systems are necessarily beneficial and sustainable for all who participate in them simply because they are "local" or "organic" is inaccurate' (2008: 241).
- 19 As one small-scale organic farmer interviewed by Lucy Jarosz argues, 'in growing your food in a small rural area, are you really supporting your local, rural economy when you take your food into the nearest big city? ... Wouldn't it be so much more direct if you focused on feeding the people right near you?' (qtd on Jarosz 2008: 240).
- 20 The term 'reification', Carruth notes, is used by her to signify the process in capitalist economies by which complex social (and I would add ecological) relationships are reduced to the circulation and marketing of commodities (2009: n 12 615).
- 21 Susie O'Brien notes that 'alternative food practices occupy sites of race and class privilege' (2011: 232). Slocum has proposed the term 'whiteness' to describe the intersections of food, politics and the 'inequalities of wealth that serve both to enable different food economies and to separate people by their ability to consume' (2007: 520).
- 22 Alternative food practices are a particularly middle class phenomenon. See Jarosz (2008: 240–241), Slocum (2007: 522) and Weatherall, Tregear and Allinson (2003: 242).

Chapter 4

- 1 As Charles Officer and Jake Page note, 'About a million people live in the Arctic, more than half of them in Siberia' (2012: 8).
- 2 For extensive discussions of the role of the Arctic and Antarctica in the cultural, particularly British and American, imagination, see Frances Spufford (1996) and Sarah Moss (2006).
- 3 Another hugely popular example of polar entertainment around this time was the Arctic diorama constructed at Vauxhall in 1852. In a further linking of literature and polar exploration, Tennyson wrote the epigraph on Franklin's cenotaph in Westminster Abbey.
- 4 In 'The Hunting of the Snark' (1876), Lewis Carroll mocks the boxes of food and equipment left behind at Resolution Bay with the words: 'forty two boxes, all carefully packed,/With his name painted clearly on each: But, since he omitted to mention the fact,/They were left behind on the beach' (1876: ll. 25–28).
- 5 Other examples of Scott's cultural legacy in the decades after the expedition are the children's book *Tarka the Otter* (1927), which in its attention to natural history was influenced by the expedition's attention to the same, and the 1948 film – coming on the heels of another war – *Scott of the Antarctic* (Spufford 1996: 4).
- 6 References to the link between exploration of the Antarctic and *Peter Pan* resurface in *Everland*. On their way to Everland, one of the explorers in the novel's 2012 storyline calls it 'Ever-ever land' (Hunt 2014: 21) – a pun on 'Neverland' in the *Peter Pan* stories. The same character notes that 'Everland does have a history of Lost Boys, though, if you think about it' (Hunt 2014: 21).
- 7 As Huggan notes, 'the recent scramble for mineral resources in the region, which shows every sign of intensifying as fast as the sea ice is weakening, also suggests the continuation of a protracted era of colonialism' (2016: 71). As many as seven countries have claimed a part of the Antarctic.
- 8 As movements for increased devolution in Wales, Northern Ireland and Scotland and the 2014 Scottish independence referendum suggest, this type of insular nationalism is perhaps more English than British.
- 9 As Baucom notes, he draws here on Georg Lukács's remarks on historical novels (2015: 154).
- 10 See, for example, Gillian D'Arcy Wood on eco-historicism in early modern literature (2008: 1–7).
- 11 See his chapter 'Emergent Unreadability' in *Ecocriticism on the Edge*, especially pp. 52–54 and 63.

- 12 Rather, the difficulties faced by and failure of many British polar expeditions lie in a lack of cultural relativity combined with a perception of the landscape. Unlike the Norwegians, for instance, who were considerably more successful in their explorations, the British largely refused to learn from the Inuit when it came to organizing their expeditions. Barry Lopez points out that the 'few technical advances the British brought to arctic exploration in the nineteenth century – India-rubber ground cloths, folding canvas boats, portable, alcohol-burning stoves – were all but inconsequential when compared with their failure to understand the advantages of fur clothing, snow houses, and fresh meat over naval uniforms, fabric tents, and tinned food' (2014: 360).
- 13 Indeed, as the IUCN Red List entry on the Great Auk notes, collecting became 'the proximate cause of their extinction' as they became scarcer (BirdLife International [2012]).
- 14 I further explore such 'extinction tourism' in the conclusion of this book.
- 15 For recent examples of ecocritical discussions of polar landscapes, see, for instance, Huggan (2016) and McGavin (2013). The collection *Arctic Discourses*, edited by Anka Ryall, Johan Schimanski and Henning Howlid Wærp (2010) also includes essays that implicitly or explicitly take an ecocritical perspective.

Conclusion

- 1 Emmerson notes that for many Arctic communities 'climate change is a death warrant', yet for some others 'the prospect of an ice-free Arctic offers the opportunity for shipping routes, economic development and Arctic prosperity' (2011: 171).