"From a certain angle": Ecothriller Reading and Science Fiction Reading *The Swarm* and *The Rapture*

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Introduction

"[F]rom a certain angle," the giant tower that Gabrielle Fox of Liz Jensen's *The Rapture* (2009) passes on her way to work "appears to straddle, rodeolike, the World of Leather" (Jensen 3). Recently paralyzed from her waist down, Gabrielle is newly attentive to such angles, such altered appearances. Her wheelchair makes her shorter than "everyone" (10), and she asks herself at a party, "Will I ever get used to the way I am forced to assess crotches whether I wish to or not?" (56). Gabrielle's self-conscious reflection on her changed visual plane reminds us that perspective is central in determining interpretation and knowledge. We see and know anew every time our physical positions shift. Taken as metaphor, Gabrielle's conscious attention to visual perspective can be read likewise as an attention to mental perspective, which plays a similar role in determining our knowledge of the world and, for the purposes of this paper, our interpretations of texts.

Textual interpretation is perspective-dependent, and by *perspective* I do not mean to suggest ideological bent (although bent matters), but instead something more akin to our expectations as we approach different genres. A text gives us those meanings for which our genre expectations and experiences allow and prepare us. Science fiction scholar James Gunn paraphrases author James Thurber's case in point: in "The Macbeth Murder Case,"

> the narrator describes a man who has been dragged on a Caribbean-island vacation by his wife. The man reads nothing but mystery novels. All he can find in the island library is a volume of Shakespeare's plays. Each day the husband reports to the narrator his misapplication of detective-story protocols to "Macbeth." He keeps looking for who-dunnit, discarding Macbeth because the person who seems to have done the crime never turns out to be the perpetrator, then Lady Macbeth because the next person to eliminate as a suspect is the one who acts too guilty. He comes to the conclusion, at last, that the porter did it. (161)

Readers approach texts with genre in mind, and as Thurber's story suggests, whatever expectations we bring to our readings will structure our interpretative experiences and shape the meanings of the stories.

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There is another piece in the operation of genre, a piece that occupies ecocritical genre theorists who are concerned with the effects of genres on us as actors in the actual world. Developing on the work of rhetorician Anis Bawarshi, Adeline Johns-Putra argues that literary genres "exert a familiarising, normalising force on our perceptions of the environment around us" (748). Genres shape our extratextual engagements in and with the world. In genre reading, readers bring genre protocols to texts, protocols learned perhaps through reading experience and/or through academic study. These protocols enable readers to find certain types of meaning in texts. Whatever interpreted meaning our genre reading supports takes on extratextual significance as discourse operates on nature through us. Genre stories thus "shape, structure, and determine . . . the environment at large" (Johns-Putra 748). *Genre* signifies the mental perspectives we bring to our readings of texts, and the full consequence of genre is realized as those perspectives facilitate readings that allow us to access meaning so as to exercise that meaning in some way.

Frank Schätzing's *The Swarm* (2004) and Jensen's *The Rapture* are most immediately of the thriller genre, the former marketed as a "gripping, scientifically realistic, and utterly imaginative thriller" and the latter as "[a]n electrifying story of science, faith, love, and self-destruction in a world on the brink." Thrillers are "gripping, plot-centered [stories], set in the detailed framework of a particular profession, which places heroes or heroines in dangerous situations from which they must extricate themselves" (Saricks 72). As such, they assume a generic encounter between readers and texts that translates in the "environment at large" as situating individuals as spectators of crime or violence and as witnesses to specialistic solutions to such crime or violence. In the thriller genre, professional identity forces protagonists to the center of any number of crises: legal, political, psychological, environmental. If readers have strong, vested interests in the protagonist's profession, their reading might involve some critical reflection on the epistemological assumptions that this profession exercises. But thrillers generally do not demand such critical engagement from readers. As the definition above suggests, thrillers are centrally concerned with the confrontation with danger, with the prevention, mitigation, or intractableness of crisis.

From where do thrillers draw their imagined crises? As *Christian Science Monitor* blogger Eoin O'Carroll notes, perhaps relying on a looser definition of the thriller than Joyce G. Saricks's, cited above, "thrillers tend to tap in to the national zeitgeist" (par. 2). In American cinema, for example, in 1956

> we had "Invasion of the Body Snatchers," which could be interpreted either as an allegory of Communist infiltration or as a satire of McCarthyite conformism. The 1978 remake, by contrast, took on post-Watergate anti-government sentiment and "Me Decade" self-help pablum. George Romero's "Living Dead" movies addressed racism in the 1960s, consumerism in the 70s, and militarism in the 80s. Stanley Kubrick's 1980 film, "The Shining" looked at the disintegration of the family. And the 1987

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> thriller "Fatal Attraction" served as a cautionary tale about casual sex in the age of AIDS. (par. 3)

No doubt environmental concern has been increasingly of the *global* Zeitgeist in the past two decades, so one would expect the newest thrillers to stage crises of the environment. Indeed, as Schätzing's and Jensen's books demonstrate, they do. (O'Carroll points out a number of recent environmental thrillers in film: *The Day After Tomorrow* [2004], *The Host* [2006], *The Thaw* [2009].) *Eco*thrillers involve a hero or heroine who is placed in remediable or, more often, irremediable ecological danger and who then works to halt or flee such danger using the tools of his or her profession.

Writing in a 2007 issue of *Library Journal*, Shawn Schollmeyer suggests that ecothrillers do more than this: "One of the newest fiction subgenres emerging over the last decade is ecothrillers. Mixing high-octane adventure with an attention to the natural world and humanity's effect on it, these novels have replaced the Cold War tensions of the classic spy thriller with our struggle to survive ecological threats" (113). Schollmeyer's definition, a "characteristic definition" in that it lists distinguishing features of the subgenre, raises important and complicating questions, though (Rabkin 16): Are generic conventions of a "high-octane" plot centered on "ecological threats" compatible with deeper reflections on "the natural world and humanity's effect on it"? If we read "ecological threats" as today's chosen narrative theme to induce thrill—as the Cold War was yesterday's—do we pay much attention to the underlying reasons for these threats? Do we dismiss such threats as entertainment-inducing spectacle? Do we learn to engage with ecological issues as onlookers only, ignoring how they implicate certain human behaviors in environmental degradation and hoping that a specialist will save us? In short, do environmental Zeitgeist thrillers narrate contemporary environmental crises toward critically productive ends, or do they exploit them—as popular media often do—for the narratable and (I suppose) exciting enormity of their consequences and solutions?

One way to test Schollmeyer's suggested compatibility of thrill with ecocritical reflection is to read marketed ecothrillers exclusively within the framework of their parent genre's characteristic definition, as "gripping, plot-centered" stories. To do so is indeed to leave out selectively those moments in such works when "the natural world and humanity's effect on it" receive more productive treatment. But this type of reading is sanctioned by the commercial language and at the same time strategic in its top-down approach, in presupposing a limiting definition of the ecothriller as adrenaline-centered, ecological crisis- and specialist-centered fiction and then reading for these expected centricities from cover to cover. It is strategic, because of what such reading forces us to overlook—namely, our recognition of a narratively induced imperative to deliberately consider the possibility of cultural work being performed in other facets of the text. Indeed, the words on the pages of books called "ecothrillers" do perform cultural work; they call for "intervention and action," as Patrick D. Murphy notes of Neil Stephenson's *Zodiac: The Eco-Thriller* (1988) (*Ecocritical* 57). But I would like to argue that "the

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natural world and humanity's effect on it" and "intervention and action" become recognized narrative concerns only if ecothrillers are read additionally as something else—as *science fiction*.

Read as apocalyptic ecothrillers—as "Adrenaline novels," to borrow again from Saricks, or as "airport novels," to borrow from *Strange Horizons* reviewer Jonathan McCalmont—*The Swarm* and *The Rapture* do not offer much in the way of critical reflection on the ecocatastrophes they stage (51). *The Swarm*'s focus on the feat of confronting the violent efforts of a superintelligent, deep-sea species to protect its ocean habitat against continued human exploitation and *The Rapture*'s focus on the feat of locating on time the psychically-predicted disaster zone of an impending undersea calamity overshadow their more than occasional, journalistic spotlighting of, for example, the dangers of methane hydrate mining. Science fiction, however, as one of the "Intellect Genres," requires readers to be attentive to those narrative moments when incongruities between the known world and the extrapolated world of the text emerge with critical, not just plot-supporting, purpose (Saricks 3). Fundamental to the successful reading and interpretation of science fiction is the reader's awareness of the genre's extrapolative practice—of the "strange newness[es]" of science fiction narratives that, importantly, connect the now with the imagined then and therefore instigate critical thinking about present human practices (Suvin 4). Read as extrapolative science fiction, *The Swarm* and *The Rapture* gain merit as ecopolitical works, for "science fiction reading" mobilizes the latent ecopolitics of ecothrillers, ecopolitics that "ecothriller reading" would otherwise diminish or fail to notice.

In what follows, I focus first on the environmental issues that *The Swarm* and *The Rapture* exploit for narrative effect, an exploitation that nevertheless remains educative in its ecojournalistic quality. I then read *The Swarm* and *The Rapture* strictly within the protocols of value-ignorant ecothriller reading, discussing the extent to which their representations of ecological crisis, as we encounter them as ecothriller readers, maintain any sort of ecopolitical import. If we take Saricks's definition of the thriller to be authoritative, ecothriller reading focuses our attention on simple interpretive questions: "What is the problem?" "Who or what is causing the problem?" and "How is the problem solved?" Any deeper engagement is not required or encouraged in ecothriller reading. But because of science fiction's extrapolative convention, in science fiction reading we are encouraged to find in the narratives' imagined, near-future environmental crises a connection to our known world. Unlike ecothriller reading, then, science fiction reading does facilitate reflection on values. Indeed, it is largely because of extrapolation that science fiction deserves much consideration as environmental literature.

Environmental Issues

Schätzing's and Jensen's books are replete with contemporary ecological and related social concerns. Should readers be uninformed about such concerns, they will

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come away from these books with at least a broader awareness of ecological issues. This awareness is the result of each author's journalistic attentiveness. In his acknowledgments, Schätzing writes, "Most books numbering over 800 pages, crammed full of scientific fact and learning, draw on the wisdom of a host of clever people, and this book is no exception" (vii). The author thanks biotechnology experts, methane hydrate scientists, biologists, and circumpolar current specialists. (He has even been accused of plagiarizing the work of a marine biologist!) In her acknowledgments, Jensen advises readers who are interested in the science of climate change to consult RealClimate.org, a website she consulted in writing her book. And like Schätzing, Jensen thanks a number of specialists for their input. Of course, for an author to admit consulting with experts and their work does not guarantee his or her work's journalistic integrity. Nevertheless, with *The Swarm* and *The Rapture*, Schätzing and Jensen have produced novels with a fair amount of accurate commentary on actually existing environmental issues, or on near future environmental issues imagined as each author extrapolates current issues into possible near futures. (But we are getting ahead of ourselves; *extrapolation* is a critical strategy and genre expectation of science fiction.)

The Swarm opens on the coast of Peru, where fish have been overharvested and rows of hotels replace "the last preserves of nature" in the seaside city Huanchaco (3). Chemical dumping and global warming join overfishing and coastal urbanization as causes of ecosystemic degradation in the world's seas (194). As ocean ecosystems deteriorate globally, so does the health of ocean species. The resident orcas of Canada's Johnstone Strait "have nothing to eat," because the timber industry has decimated the forests of Clayoquot Sound and surrounding areas; and "Once the trees are gone, the rivers fill with silt [and] the salmon lose their spawning grounds" (32). Additionally, toxicological research finds these orcas to be "badly contaminated with PCBs and other environmental pollutants" (121). The Inuit people suffer from such contamination as well:

> [I]ndustrial chemicals [. . .] were transported by the wind and the currents from Asia, North America and Europe to the Arctic Ocean. [. . .]. Breastmilk from Inuit women contained levels of PCBs that were twenty times higher than the amount listed as harmful by the World Health Organization. Inuit children suffered from neurological impairments, and IQ levels were falling. (543)

On the other side of the globe, the oil industry has turned the North Sea into "an industrial landscape" (42) that is the expected consequence of an industry that will only terminate its extractive activities when they "consumed more energy than the oil itself could generate" and thus "ceased to make financial sense" (307). With such "financial sense" as a limiting factor, oil companies must find ways to reduce their costs while keeping the oil flowing using increasingly riskier methods in deeper waters. One of *The Swarm*'s plotlines details the effort of the Norwegian oil company Statoil to do just this. Statoil's head of exploration and production, Clifford Stone, secretively pursues

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unmanned subsea oil drilling, which promises "enormous savings and would revolutionise offshore processing" (307). *The Swarm* thus adds peak oil and its consequent environmental and social implications (e.g., technological unemployment as a result of cost-saving technologies) to its list of current ecological and social issues; and the plot really gets moving when such implications take the form of a deep-sea worm species that is at first an environmental obstacle to Statoil's plans and is then discovered to threaten an apocalyptic end to coastal populations around the world, because of its destabilizing effect on deep-sea hydrates. As an environmental impediment to the oil company's exploits, the worm requires attention from Statoil executives, who contact marine biologist Sigur Johanson in the interest of using science to address a problem that they want "to get rid of" (213). An additional matter spoken to in Schätzing's book is thus the fear that "Research is in the hands of big business" (213). As one character, a scientist also studying the worms and their effect on methane hydrates, laments, "Science always has to have an immediate application—and, preferably, one that gives industry free rein" (213).

The Rapture is less extensive than *The Swarm* is in its environmental journalism, but its journalistic moments are nevertheless educative. One character teaches readers that hurricanes are "getting bigger every year because of the increased air temperatures" and "With global heating, we're seeing all sorts of things we haven't seen before" (60). This same character informs readers about the first-ever documented South Atlantic hurricane. (The real date for the anomalous category 2 storm [since named Cyclone Catarina], however, was 2004, not 2002.) To cover other climate change consequences, Jensen has her main character browse the internet and skim stories about

> the Siberian tundra defrosting faster than even the most pessimistic models have predicted, about the outer edges of the Amazon basin being reduced to giant puddles of mud, full of choking fish, about how one day soon the remaining forest will burn and become savannah: one lung gone. About the Gulf Stream absorbing the huge Arctic melt, slowing down, bringing less heat to the Atlantic, and playing havoc with shorelines. (125-126)

Of the several environmental issues that Schätzing and Jensen collectively address, the consequences of a large methane hydrate disassociation event are given sustained attention, figuring significantly into the plots of both novels as the crisis event. Materials scientist Bhakta B. Rath defines methane hydrates: methane hydrates, "or clathrates, occur naturally as crystalline solids under the proper conditions of pressure and temperature. The nearly transparent, ice-like materials basically consist of gas (primarily methane) molecules surrounded by a cage of water molecules stabilized by hydrogen bonding" (15). Discovered in the 1930s by petroleum engineers whose pipelines were getting clogged with the icy material, naturally-occurring hydrates have since drawn celebratory attention as an, if not *the*, energy source of the future. The

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energy available in the hydrates found deep below the sea floor and the Arctic tundra is "more than double all of Earth's known oil, gas, and coal deposits combined" (Normile 1456). This abundance means that, given unsustainable levels of current oil and gas exploitation, once the technological obstacles to mining hydrates are overcome, "methane gas hydrate has the potential to be widely used as a new energy source" (Lee and Holder 186). Rath was one of the first scientists to envision the hydrate future: "These vast gas-hydrate deposits will someday become our major energy resource. Nearly pure methane, easily and economically separated from massive clathrate deposits, could satisfy the world's energy needs for many centuries" (15). More recently, writing in a 2006 issue of *Chemistry & Industry*, Richard Corfield sustains the utopian vision reflected in much of the laudatory industry literature:

> [I]magine a world without nuclear power stations. Imagine a world without nuclear power, wind farms, tidal barrages, solar panels, OPEC, oil cartels, petrol, oil refineries or the share price of oil as a crucial factor in the world economy. Imagine a world where energy is cheap and plentiful and almost every country on our planet has access to essentially limitless reserves. Imagine a world where the US carbon dioxide emissions are virtually non-existent.
>
> Impossible? Perhaps not: the floor of the ocean and vast tracts of high-latitude permafrost are loaded with vast reserves of natural gas—methane—in a strange, ice-like form known as methane hydrate. (22)

Yet this post-scarcity utopia of "vast" methane resources does not come without risks, risks even the proponents admit. The first is global warming. As a heat-trapping greenhouse gas, unburned methane is twenty times more potent than carbon dioxide in warming the atmosphere. Rath cursorily attends to the "leakage of methane to the atmosphere, which could aggravate the greenhouse effect" (15), and Corfield refers to the "methane slumps" (the liberation of undersea methane into the atmosphere) that are believed to have instigated the period of intense atmospheric warming that characterized the transition between the Paleocene and Eocene epochs fifty-five million years ago (24). The concern, here, is not with the burning of methane for energy—it "produces less carbon dioxide per mole than any other fossil fuel when it is used as a fuel" (Lee and Holder 185-186)—nor necessarily with potential methane leakages during its transmission and processing. Instead, most worst-case-scenario discussions of methane hydrate mining and climate-changing methane release events center on evidence for the geological role of methane hydrates. As David Adam notes, "Hydrates could lend mechanical strength to the sediment. Removing them might make the sea floor fail, producing underwater landslides and enormous uncontrolled gas releases" (914). A major risk of hydrate mining is thus the potential for it to rapidly destabilize the ocean floor along continental slopes, causing not only the liberation of the "vast" methane pockets, but also massive and devastating tidal waves. Another speculated risk is that methane bubbling up from a sea floor mining site will lower the density of the

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water beneath the ocean-going vessels above the site, resulting in seemingly unexplainable sinkings. Adam finds hydrates researchers to be skeptical of this theory, but energy companies "have lost ships when large amounts of methane have been released from conventional reservoirs during drilling projects" (Adam 914).

In *The Swarm*, Schätzing is very aware of these theorized risks. In the book, Gerhard Bohrmann is a methane hydrate expert who explains in detail the late Paleocene methane event as he speculates about the most drastic climatic consequences of the worms that are boring holes into the sea floor, releasing methane into the atmosphere and threatening a recurrence of "a vicious cycle" of major warming (111): methane warms atmosphere; warmed atmosphere warms ocean; warmed ocean disassociates icy hydrates, liberating more methane; more methane further warms atmosphere, and so on. Fears about ships sinking as a result of methane rising to the ocean's surface are addressed in the book, as well; a scientist studying thermohaline circulation in the Greenland Sea dies as an underwater methane blowout engulfs his boat. Finally, and most significantly in the plot of this ecothriller, is the Storegga Slide, a massive underwater earthquake in the North Sea that results in a tsunami that devastates the Shetland and Faroe Islands, the Scottish mainland, the southwest coast of Norway, the east coast of the United Kingdom, and the west coast of Denmark.

The Storegga Slide likewise figures prominently into the plot of *The Rapture*. Jensen foreshadows the novel's climactic event when her narrator researches methane hydrates: "a massive cataclysm involving sudden suboceanic methane gas is not just a theoretical possibility but a dramatic part of geological history. Twice in the distant past, the planet's atmosphere has been microwaved—resulting in the devastation of most of life on Earth" (162). Later, ignoring the seismic data that would halt its hydrate mining operation, an energy company upsets the sea floor with its drilling rig, triggering a massive methane release event in the North Sea, the most immediate effect of which is a tsunami that devastates North Sea region countries.

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Ecothriller Reading

As Terry Gifford argues in his recent study of Jensen's book, a primary weakness of the ecothriller is that the world-saving performed by its characters is "an abstract idealization," meaning for Gifford that the book ultimately imparts on readers no "wonder, curiosity, respect and concern in the face of the amazing details of material reality in which we have our home" (724). This idealized world saving, Gifford notes, serves merely "a narrative function"—and a clichéd one at that. Rather than telling politically and culturally productive stories about values, *The Rapture* specifically, and the ecothriller more generally, "merely exploits current anxieties without a sense of the values by which we might act to avoid its narrative outcome" (726).

The extent to which we read *The Swarm*'s and *The Rapture*'s journalistic attention to environmental issues toward any end that goes beyond just awareness for the sake of understanding the novels' plots is, I would argue, a function of the generic expectations

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we bring to our readings. James Gunn asserts, "our first act as readers is to identify genre: in the larger instances, we have to determine whether we are reading poetry or drama or fiction or biography or even correspondence (e-mails these days) before we know how to read the writing" (159). We must exercise the expectations that allow us to read genres well; "good reading involves identifying the genre and then applying the correct protocol," Gunn argues (160). He continues, "If one doesn't know the correct protocol or misidentifies the genre, one is likely to misread the work" (160). Indeed, Schätzing's and Jensen's books can be read "well" as ecothrillers, if by ecothriller reading we are engaging in a reading experience in which we witness a gripping plot that highlights an impending disaster and its most immediate cause, and then follow one or more experts as they try to prevent the disaster, or at least inform others of its imminence.

The cause of the Storegga Slide in *The Swarm*, the worm species referred to earlier, turns out to be more than a temporary barrier to Statoil's subsea processing plans, and for ecothriller readers it turns out to signal something other than the need to reflect on values. The worms are in fact a manifestation of the "Yrr," an ancient, ocean-based swarm intelligence that likewise expresses itself as violent orcas and humpback whales that attack tourist cruisers and fishing boats, as zebra mussels that infest the hulls of shipping vessels, as venomous jellyfish that invade coastal waters, and as toxic lobsters that kill chefs and sicken diners. In *The Swarm*, the Yrr is the agent of this destruction. If we are initially encouraged to locate the anthropogenic, or better yet economogenic, origins of the many environmental and social problems represented and imagined in the book—fisheries collapse, global warming, deforestation—as ecothriller readers we soon take a pass on this effort as the narrative turns our attention to the Yrr's rampage. Read as an ecothriller focusing on an urgent problem and then finding this problem's cause for the purpose of addressing it, *The Swarm* is about the Yrr and the specialists who will curtail its apocalyptic rage. As such, the book's potentially astute commentary on the values that have made overfishing, deforestation, peak oil, and other environmental and social degradations possible gets lost behind a plot to save the world not from dominant economic values that have consequences, but instead from an enemy of humans. McCalmont reviews *The Swarm* as an ecothriller and concludes that it fails "to identify the moral centre of environmentalism," for rather than blaming "mankind for the environmental catastrophes that befall it, *The Swarm* blames the yrr" (par. 7, 5).

That the Yrr is believed by some in the novel to be fighting for its life against an exploitive humanity only reinforces the "abstract idealization," the fantasy, that this ecothriller performs. As Slavoj Žižek notes, referencing Lacan, "the fundamental subjective position of fantasy" is "to be reduced to a gaze observing the world in the condition of the subject's non-existence," or in the case of *The Swarm*, the subject's *impending* non-existence (*Living* 80). Indeed, "Mother Nature's revenge" is a common rhetorical trope in environmental fiction, nonfiction, and film, one whose effectiveness depends on the generic lens through which the rhetoric is viewed. Ecothriller reading does not encourage a more critical confrontation with this trope, one that would frame

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the "monster," so to speak, as the result of certain practiced values—or even as us—and then ask us to think not about how to kill the monster, but instead about how to modify our own monstrous values. (H.G. Wells's *The War of the Worlds* [1898] is one of many examples of the effective use of this trope in science fiction.) In *The Swarm*, the Yrr quickly becomes the enemy other—the not us—in what is ultimately a "human vs. nature" story; and one of the book's problems is that by staging such a story it defines exploitive humanity too broadly, not doing much to identify which humans and which institutionalized systems are most responsible for environmental and social degradation, for the Yrr's vengeance.[1]

An ecothriller reading of Schätzing's book follows the battle between a collection of human specialists (including not only the marine biologist Johanson and the hydrate scientist Bohrmann, but also a cetologist, a SETI researcher, a deputy director of the CIA, and the commander-in-chief of the US Central Command) and the ferocious, ubiquitous Yrr. The specialists are trying to save the world from a species who takes the shape of, among other things, millions of undersea worms that consume methane-eating bacteria, only these worms are different from the existing species, *Hesiocaeca methanicola*. To protect itself against humanity, the Yrr gives its version of the worms "'Powerful mandibles, designed for boring or burrowing'"—powerful enough to bore down into deep-sea hydrates, releasing bubbles of methane, as well as destabilizing the Norwegian continental shelf (77). We might say, then, that an ecothriller reading of *The Swarm* brings out at most a secondary critique of human values, because these values do not have the same consequential weight as the Yrr's actions do. Human activity provoked the Yrr; it is fighting to save itself from us. But reading Schätzing's book as an ecothriller doesn't enable the exploited whales, for example, to generate our sympathy and our reflection on values and actions. Certain human values might have enabled the scope of environmental degradation that provoked the Yrr to show itself after living in the deep ocean for two hundred million years. The concern that drives the narrative of *The Swarm*, though, is how to confront the radicalized species before it is too late. In the end, after participating in successfully upsetting a militaristic plan to kill the Yrr with a toxic pheromone, one character grants humans "extra time," seemingly by meeting the Yrr face-to-face in a kind of interspecies diplomacy (867).

If ecothriller reading largely confines the literary experience to reading about a pressing problem, its cause, and its solution—to answering What? Why? and How?—then Liz Jensen's *The Rapture* is about an impending Storegga event, the mining operation that will cause it, and the fast-paced effort to locate and evacuate its potential victims. Unlike *The Swarm*, *The Rapture* does not defer responsibility for environmental disaster to the not-us. In the former book, Statoil's wrongdoings in secretively pursuing risky drilling methods are of a piece with all the other anthropogenic environmental degradations that likely provoked the Yrr's efforts, but ultimately the Yrr is the terrorist whose world-ending rampage must be stopped in one way (diplomatically) or another (militarily). In *The Rapture*, however, the "energy giant Traxorac, who are drilling for

[1] The Yrr's first victim is a single Peruvian *caballito de totora* fisherman—hardly a threat to its existence.

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frozen methane" off the coast of Norway, and who ignore seismic data that indicate the risks they are taking, are unequivocally the cause of the eventual Storegga slide (241). So the question with Jensen's book is not about the extent to which it, like Schätzing's book, hands off or blurs responsibility for environmental disaster, but instead the extent to which reading it as an ecothriller can instigate a productive critique of the human values it seems to want to interrogate.

Like Schätzing's book, *The Rapture* thrills us as we read about a group of specialists who race to prevent a final, unimaginable catastrophe. The anxieties it exploits are less assorted than those dramatized in *The Swarm*, as it focuses primarily on climatic and geological events of varying degrees of impact. There is a tornado in Aberdeen, an earthquake in Istanbul, and a hurricane in Rio de Janeiro that topples that city's Christ the Redeemer statue. Predicting these events is Bethany Krall, an institutionalized teenage girl undergoing electroconvulsive therapy (ECT) to treat the condition that led her to murder her religiously zealous mother. After ECT, Bethany has visions of forthcoming catastrophes, including not only those just mentioned, but also a methane release and Storegga event similar to that imagined in *The Swarm*. As with the Yrr in *The Swarm*, Bethany quickly becomes the focus of attention in *The Rapture*. To locate ground zero for Bethany's latest prediction, the novel's protagonist (Gabrielle, a psychologist) and others who have joined her in taking Bethany's predictions seriously must kidnap the teenager from a hospital, take her to a secret location, and administer their own ECT to instigate her prophetic mind. For readers, the ecopolitical significance of Traxorac's willing ignorance of seismic data, and indeed of *The Rapture*'s other moments of critical commentary, fades as Bethany's psychological phenomena take center stage in the protagonist's effort to inform the public about the coming disaster.

Science Fiction Reading

For James Gunn and other science fiction scholars, a key protocol for the successful interpretation of science fiction is understanding that the genre "creates a functional world that is different from but *consistent with* the world in which the reader lives" (161, emphasis added). This different but historically consistent world results from an author's extrapolation of current reality into future scenarios. Defining *extrapolation* within the context of science fiction studies, Gary K. Wolfe writes, "it is used to mean the technique of basing imaginary worlds or situations on existing ones through cognitive or rational means" (16). One of the first ecocritics to address science fiction, Patrick D. Murphy highlights extrapolation as a literary strategy that links the genre with environmentally concerned writing:

> The application of the concept of extrapolation to science fiction insists that the writing and reading of SF are intimately linked to, and based on, getting people to think both about the present and about this world in which they live. SF stories that emphasize analogy between imagined worlds and the reader's consensual world encourage such thinking as well.

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> The encouragement of that type of critical thinking provides a linkage between science fiction and nature-oriented literature. ("The Non-Alibi" 263)

Taken together, Gunn's, Wolfe's, and Murphy's observations on extrapolation suggest its centrality as a genre protocol that we must expect and read for when encountering science fiction. When we bring an expectation of extrapolative strategy to our reading of science fiction, we will interpret its imagined futures as continuous with the present—if even *as* the present—and not disconnected from it in a far-off or far-out, ahistorical time or universe.

As Fredric Jameson argues, science fiction "does not seriously attempt to imagine the 'real' future of our social system" (288). The genre's extrapolative orientation instead reminds us more generally that the now is always a historical moment that precedes whatever will come later. In Jameson's words, science fiction apprehends "the present as history" (288). And if the present is the past of "something yet to come," as Jameson notes, it is imperative that, rather than maintaining modes of thinking and being that are rapidly proving to be environmentally unsustainable and socially unjust, we instead work in the present to foster a better something yet to come (Jameson 288). In *First as Tragedy, Then as Farce*, Žižek offers an insight complementary to Jameson's take on science fiction, citing philosopher Jean-Pierre Dupuy to propose a method for reading narratives of future catastrophe in socially valuable and historically responsive ways:

> [W]e should first perceive (catastrophe) as our fate, as unavoidable, and then, projecting ourselves into it, adopting its standpoint, we should retroactively insert into its past (the past of the future) counterfactual possibilities ("If we had done this and that, the calamity that we are now experiencing would not have occurred!") upon which we then act today. We have to accept that, at the level of possibilities, our future is doomed, that the catastrophe will take place, that it is our destiny—and then, against the background of this acceptance, mobilize ourselves to perform the act which will change destiny itself and thereby insert a new possibility into the past. (*First* 151)

Extrapolation in science fiction encourages us to think about and act in the present with the future in mind, and of course to understand that disastrous "futures" already plague many societies and environments around the world. Indeed, because we have science fictional images of possible futures cognitively and rationally linked to existing reality, "we have no alibi for avoiding addressing the results of our actions today" (Murphy, "The Non-Alibi" 263).

The science fiction writer and scholar Ursula K. Le Guin dislikes the idea that extrapolation defines science fiction. She writes in her 1976 introduction to *The Left Hand of Darkness*,

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> Science fiction is often described, and even defined, as extrapolative. The science fiction writer is supposed to take a trend or phenomenon of the here-and-now, purify and intensify it for dramatic effect, and extend it into the future. "If this goes on, this is what will happen." A prediction is made. Method and results much resemble those of a scientist who feeds large doses of a purified or concentrated food additive to mice, in order to predict what may happen to people who eat it in small quantities for a long time. The outcome seems almost inevitably to be cancer. So does the outcome of extrapolation. Strictly extrapolative works of science fiction generally arrive about where the Club of Rome arrives: somewhere between the gradual extinction of human liberty and the total extinction of terrestrial life. (par. 1)

Le Guin's criticism of extrapolation is ultimately and rightly an effort to protect the creative freedom of the science fiction writer, to liberate the writer from any obligation to present the reader with an impossible omen of the future. Extrapolation, however, is not synonymous with prediction, as Wolfe's definition suggests. In observing "Science fiction is not predictive; it is descriptive," Le Guin approaches extrapolation—again, a protocol that she originally sets out to critique—in a way tantamount to its supporters (par. 7). With its imagined futures, science fiction reflects its readers' lived worlds. Ultimately, science fiction reading is an effort to decode the narrated future as a description of the now.

Even if ecothriller writers employ extrapolation in their imagination of disaster, successful ecothriller reading does not require us to connect our actual present with the imagined worlds of the stories. We can assume that the environmental concerns exploited in ecothrillers are fabulated fantasies and still read the genre well. But as soon as we read the represented environmental issues as continuous with our historical moment, we become science fiction readers attuned to the linkages between the actual and the imagined. If we bring the extrapolation protocol to *The Swarm*, no longer is it just a "gripping . . . and utterly imaginative thriller"; it also encourages us to consider the effects of certain human activities on other species and their environments. The Yrr is not an unprovoked enemy of humanity but instead a consequence of certain human behaviors. In science fiction reading *The Swarm*, the severe overfishing and deforestation represented in the book are no longer just contexts that set up the plot. Such overfishing and deforestation, and indeed the other ecological degradations that Schätzing highlights, come to the foreground as rationally conceived possibilities and consequences. Of course, the Yrr is not the subject of the rational extrapolation; the environmental degradations that instigate the Yrr are.

The Rapture likewise responds well to science fiction's extrapolation protocol. Science fiction reading Jensen's book shifts its driving focus away from Bethany, her predictions, and her role in minimizing human casualties in the face of the methane release event. What comes to the fore is an implication of the practices that lead to the

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imagined catastrophe. Jensen's ecojournalistic attention takes on a new significance, no longer present to set up her novel's thrilling, climactic moment but instead highlighted as current environmental issues to which we must pay attention. Terry Gifford argues, "Ultimately [*The Rapture*] reveals that its final thrust is not really about saving people, but only Gabrielle and [her lover] Fraser Melville" (725-726). However, read as extrapolative science fiction, *The Rapture* makes an effort to mobilize readers toward environmental action by portraying a future that is connected to human industrial activities of the present, activities to which, as Gifford admits, Jensen gives publicity.

Conclusion

Drawing a distinction between ecothriller reading and science fiction reading is important for two reasons. First, as has already been noted, environmental concern is of the global Zeitgeist today. As such, environmental issues have shown up, and continue to show up, in popular media. Often, environmental concerns can too easily be rendered in these media merely as background contexts for gripping plots, as in *The Swarm* and *The Rapture*. We must therefore find ways to reinstate environmental issues as foregrounded concerns within media, like ecothrillers, that otherwise exploit these concerns for narrative effect. Reading ecothrillers as extrapolative science fiction allows this reinstatement. With science fiction reading, our attention shifts from thrilling plots to ecopolitical reflections on the current and possible future consequences of present human values and behaviors.

Also, when we read ecothrillers with an expectation for science fiction's extrapolative protocol, and from this type of reading discover ecopolitical concern in the narratives, we come to recognize the central importance of science fiction for contemporary environmentalism. Not only do many works in the history of the genre provide us with stories that explore existing environmental issues and the coming horizon of degradations resulting from certain human values and practices, they also impart on us an interpretive approach to the world that can be productively harnessed to instigate reflection on these values and practices now, when their ubiquity seems to make them invisible. Science fiction reading situates us at a "certain angle" to the textual world *and* the actual world of everyday experience. With it, not only do we see texts in a new light; we see present world environmental degradations as connected to historical decisions and actions. Understanding this connection, we cannot help but also comprehend present decisions and actions as consequentially responsible for the future of Earth and its species.

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