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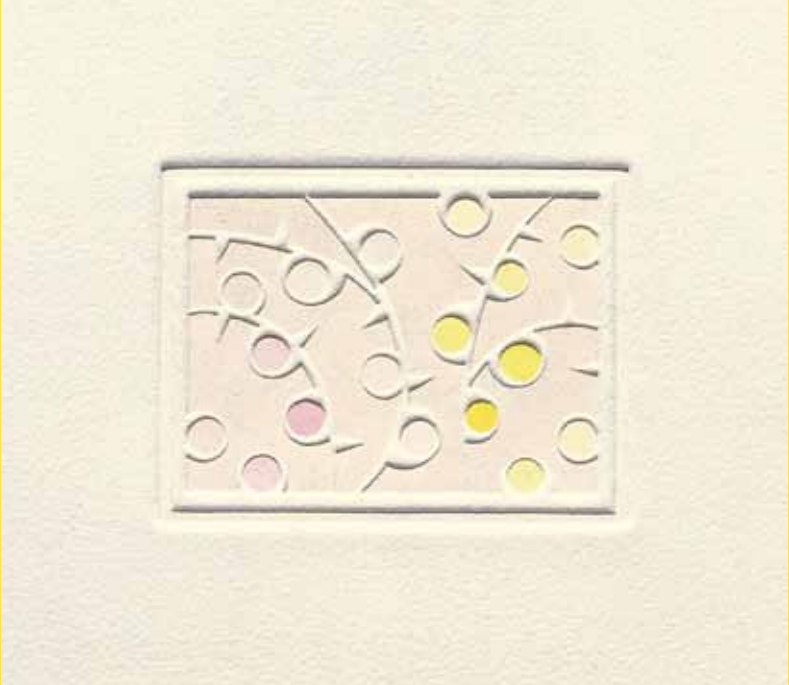

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On the Apocalypse that No One Noticed

"[W]hat if they gave an apocalypse and nobody noticed?" was the question that Brooks Landon (1991, 239) proposed as the central thematic concern of the 1980s cyberpunk – a movement which today represents a landmark in the development of the science fiction genre. Diverse as they are in their focus and scope, the contributions to this issue of *ELOPE*, dedicated to the position and role of speculative fiction, and especially science fiction, in a world which is increasingly becoming speculative and science fictional, invariably demonstrate that an apocalypse did indeed take place and went by largely unnoticed.

From the present perspective, the cyberpunk movement is revealed as the inevitable response of science fiction (SF) – *and* fiction in general – to the cultural realities of the early 1980s, when the processes implicit in the development of the economy, society and culture after the Second World War culminated on the level of everyday experiential reality. These processes have been part and parcel of the globalizing tendencies of post-industrial capitalism, fuelled by the rapid growth of advertising and media industries, and facilitated by exponential development of information technologies which have provided ever more effective means for the storage, manipulation and distribution of information. The ubiquity of media that disseminate information on a global scale instigated the gradual modification of the value systems of individuals, and the formation of mass identity and mass culture.

Under the constant barrage of media-generated global trends, the notion of reality came to rely less and less on subjective, lived experience, but rather on its mediated reproductions. As these primarily serve the interests of global capitalism, the capitalist shift of production relations, in the process of which buying becomes consumption, at this point reaches its definitive stage, whereupon the representational value of products completely replaces their functional and exchange values. Products become objects of consumption which circulate as signs, creating meaning in relation to other signs. Through the act of consumption they represent – signify – the consumer, making the popular maxim "you are what you buy" acutely literal.

The processes described have gradually transformed the established concepts of reality and subject to the point where the now-transformed concept is no longer part of the same ontological order as its original counterpart. Such major alterations of the fundamental metaphysical paradigms have historically coincided with the changing of epochs, and indeed, the developments described above are invariably recognized by theoreticians in all pertinent disciplines as being inherent to the advent of the new epoch generally referred to as postmodernity. Arguably the most succinct conceptual framework – a framework which effectively incorporates all the main accents of existing theoretical discourse on postmodernity – was the one developed by Jean Baudrillard (cf. Krevel 2016, 175–76). His notions of hyperreality and the fractal subject also seem the most appropriate instruments for explaining the apocalypse Landon was referring to, as well as for assessing the impact of that apocalypse on science fiction.

Hyperreality refers to the reality of mediated reproductions of experience, a condition that involves "substituting signs of the real for the real itself" (Baudrillard 2004, 366). Such reality is produced from "matrices, memory banks and command models – and with these it can be reproduced an indefinite number of times" (Baudrillard 2004, 366). In other words, our notions of what is real depend on data we receive through what has become – due to the digitalization of all media (from print to movies and music and film) – a single communication channel. Because all media are now encoded in the same, digital, way, we have seen an "erasing [of] the notion of the medium" (Kittler, von Mücke and Similon 1987, 102). Hence, digitally coded information transferred through this channel conditions our perception of the environment, but refers to nothing tangible, as it is an algorithm, a sign, a mere probability of a message (cf. Shannon and Weaver 1949, 3). The actual message relies on the configurations that these signs establish with other signs, meaning that what we perceive as reality is a system of more or less compatible information, against which each new piece (or cluster) of information is verified. Such reality is therefore but one of the many potential configurations of the signs that circulate the postmodern mediascape, which means that in the paradigm of the hyperreal all realities exist simultaneously as a potentiality.

Similarly, Baudrillard's fractal postmodern subject (2011, 47) refers to the multiplicity of selves, creatable through the consumption of available objects-turned-signs. The subject is *fractal* – "not at all contradictory with mass status, […] both subdivisible to infinity and indivisible, closed on [it]self" (Baudrillard 2011, 64) – because all individuals choose from a common fund of these signs, and because these signs are coded in the same way. Consequently, such a subject is a "subject without other" (Baudrillard 2011, 64), an endless variation on the same subject, which means that the postmodern self is essentially a potential identity creatable from available signs. In the paradigm of the fractal subject, then, all identities exist at the same time as a potentiality, and what we perceive as a *self* is an identity variant actualized by observation.

To stir this discussion in the direction of our central concern – science fiction – let us briefly examine the framework presented in terms of the discipline that has been recognized as the scientific counterpart to the historical change of paradigm, as well as to the ontology of the new epoch: quantum physics. Complex, controversial and complicated to the point of incomprehensibility as quantum physics may be, the conceptual compatibility with postmodern metaphysics is implicit in its fundamental premise: namely that on the subatomic levels, matter and energy behave according to the principles of superposition, entanglement and the measurement problem, which cannot be accounted for by the principles of Newtonian physics.[1] Perhaps the best way to illustrate the impact of these principles on the metaphysical level is to employ the many-worlds interpretation, which is the central postulate of quantum mechanics and which maintains that our universe is one of many possible universes, as each act of observation – each selection – causes the splitting of the world into that which was observed and that which was not. From that perspective, reality is revealed as a multiverse of all possible quantum results (cf. Byrne; Deutsch 294), which directly corresponds to Baudrillard's concepts of hyperreality and fractal subjects as co-existing potential configurations of mediated data that are actualized through the act of observation.

It is not surprising that in the domain of literature science fiction has been the first to react to the change of paradigm, as the new conditions directly interfere with its fundamental premises

[1] "Superposition" is a state in which a particle can be in multiple states at once; "entanglement" refers to the coordination of the properties of two particles across space and time; and the "measurement problem" suggests that the act of observation alters the observed since the observer is always part of the system, interfering with it by the very act of measurement.

and genre specifics – most notably with its focus on predominantly future-oriented, alternative ontological set-ups that are organized as to ensure cognitive dissonance. The reaction, generally attributed to the cyberpunk movement, was, however, more a matter of inevitability than intention. Once the subject of conventional SF extrapolation is a cybernetic machine which conceptually facilitates world-building through coding, the focus of SF exploration necessarily moves from the conventional distant futures to worlds which are – timewise – much closer to ours, and recognizable because they are built from the same building blocks and coded in the same way as our world. The thematic preoccupation with co-existing, familiar realities, none of which is more real than the next, brings cyberpunk into the conceptual vicinity of its mainstream contemporary – postmodernism. So much so, in fact, that the two find themselves on the same ontological plane, where "[c]yberpunk translates or transcodes postmodernist motifs from the level of form (verbal continuum, narrative strategies) to the level of content or 'world'" (McHale 1992, 246). The most obvious consequence is the much-theorized cyberpunk blurring of the dividing line between the genre and the mainstream (cf. McHale 1992, 236; Krevel 2012, 57).

In the subsequent decades this erosion of genre boundaries has expanded across the entire literary spectrum, meaning that cyberpunk was the herald of a broader change. Within the postmodern quantum paradigm, the prevailing definitions of science fiction – or any fiction – as an independent genre, the specifics of which profoundly differ from other instances of writing, can no longer apply. Take, for instance, the fundamental difference Darko Suvin charts between science fiction and (surely its closest relative) fantasy, namely that of possibility and impossibility. Suvin argues that science fiction produces worlds that are potentially possible because they fundamentally reference our empirical reality as its "dynamic transformation […], not only a reflecting *of* but also *on* reality" (2016, 22). Fantasy, on the other hand, "creates a world where one or more all-important *individual agents intimately interact with a spacetime* not only radically different from the author's historical moment of social life but also, and primarily, *denying history as socio-economic lawfulness*" (2016, 404–5). A dialectics of this kind is utterly foreign to the principle of potentiality governing postmodern physics and metaphysics, according to which all realities *a priori* co-exist as a *multiverse* contained in the exponentially multiplying totality of mediated information. In the quantum paradigm, *empirical* and *historical* are purely arbitrary signs which acquire their meaning in relation to other signs that are part of the hyperreal system in which they participate.

Certainly the most literal examples of the last statement are the recent phenomena of *fake news* and *alternative facts*, which despite their alleged "untruthfulness" significantly interfere with the quotidian experiences of postmodern individuals. This brings us to the issues of what is true and what is real (and, more importantly, what is fiction) within the new paradigm, which also significantly affects the role, function and potential of literature in the current political, social and economic conditions. Once the notions of reality rely exclusively on media-transferred data, the fact that literature is a medium endows it with a reality-building potential. In other words, since before the realization in hyperreality all information has the same worth, "literary" data have the same potential for the creation of hyperreality as any other data. With that, the notions of realness and fictionality merge within the principle of potentiality, which in the event of its actualization as hyperreality produces the truth. It is along these lines that we can understand Landon's assessment that "the real message of cyberpunk was that of inevitability – not what the future *might* hold, but the inevitable hold of the present over the future – what the future could not fail to be" (1992, 239). Certainly the most notorious case in point is *cyberspace*, a coinage which seminal cyberpunk author William Gibson first used in his 1981 short-story "Burning

Chrome" as a *novum* resulting from the extrapolative combination of computer technology of the late 1970s and the immersive effects of the early arcade games (Jones 2011).[2] Not only has the word *cyberspace* become part of our everyday vocabulary (with much the same meaning of computer-enabled virtual reality), what it usually refers to – i.e. the internet – conceptually and structurally matches Gibson's invention.[3]

With the processing speed of computers increasing at a double exponential rate (Kurzweil 2006, 40–41), the ensuing acceleration of the manifestation of data on the experiential level inexorably decreases the distance between the future imagined and the present experienced, ideally by the same factor. If in the 1980s cyberpunk extrapolations charted a future that could not fail to be, two decades later the most prominent herald of that future, William Gibson, has repeatedly asserted in interviews that in the new millennium reality changes with a rapidity that prevents extrapolation of the present into a specific future. "Fully imagined cultural futures were the luxury of another day, one in which 'now' was of some greater duration. For us, of course, things can change so abruptly, so violently, so profoundly, that futures like our grandparents' have insufficient 'now' to stand on. We have no future because our present is too volatile" (Gibson 2004, 57), ruminates Hubertus Bigend, the central figure of Gibson's 2000s Bigend trilogy placed – accordingly – in the familiar settings of the post-9/11 reality. Tangible and recognizable as these settings are, they simultaneously emanate a distinctive SF feel – these worlds are cognitively dissonant (cf. Hollinger 2006; Tomberg 2013). It is as if in the first decade of the 2000s the distance between the future and present not only disappeared, but that the future at that point had, in fact, all but colonised the present.

The shift of temporal focus in Gibson's works has indeed been largely attributed to the collapse of futurity upon the present in the techno-cultural societies of post-industrial capitalism. In his award-winning study of Gibson's Bigend trilogy, Jaak Tomberg argues that the "cognitively dissonant pace of change in contemporary technocultural society" (Tomberg 2013, 264–65) renders imagining of ontologically different futures impossible. Veronica Hollinger similarly observes that in the societies of post-industrial capitalism the future no longer seems "a site of meaningful difference" (2006, 453), and the present, due to its totalizing spatial multiplicity, gains an estranging quality (2006, 465). Within the ontological framework of the current phase of postmodernity, governed by potentiality and corroborated by the latest developments in science, the shift of extrapolation from the temporal to the spatial axis initiated by cyberpunk indeed seems inevitable, making Gibson's 2000s "science-fiction realism" (Hollinger 2006, 460) paradigmatic of the development of science fiction in the new millennium (Jameson 2005, 392). And since within that framework any literary treatment of reality *a priori* produces a hyperreal potentiality of the present that is at once familiar and estranging, the convergence of the speculative and the mimetic might indeed prove to be the dominant mode of contemporary literary production in general.

This, and the fact that within such a set-up literature of any kind can no longer be associated with fiction(ality), brings us to the main concerns addressed in this issue of *ELOPE*: What is science fiction today? Is it a distinctive, independent genre, a speculative subgenre, a stylistic

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2 The invention of the term has also been attributed to Vernor Vinge. As both used it at about the same time, it is unclear who had come up with it first. Given Gibson's popularity, however, the entering of the word into general vocabulary was most probably prompted by his usage.

3 Developments in the fields of genetics, robotics and nanotechnology from the 1990s onward have, in fact, in some way or other rendered a number of cognitively estranging *nova* from Gibson's 1980s Sprawl trilogy either literally or conceptually concrete. For a more detailed treatment see Krevel 2014.

feature, or perhaps a mere marketing category? What is its relation to the present moment? What sort of impact can it have, what role can it play?

With regard to their main accent, the essays in this collection are organized into three largely provisional and permeable thematic clusters. Given that all the authors more or less explicitly acknowledge the waning of genre boundaries – and indeed all other boundaries – in their treatment of the various issues arising from the production of contemporary speculative and science fiction, the first section delves into the problematics of genre. The second cluster is dedicated to issues which are closely related to genre indeterminacy, namely the re-definition of the connection between (SF) speculation and experiential reality, as well as the possible repercussions of this re-definition. In the last part, the implications of the shift of extrapolative and speculative focus from the temporal to the spatial axis are explored, ultimately connecting the sprawling multiverses of narrative speculation across the mediascape to the current political and economic realities, as well as to the increasing permeability and arbitrariness of genre boundaries.

The issues arising with regard to the status of science fiction as a genre in the present day and age are the focus of Michelle Gadpaille's analysis of Margaret Atwood's 2006 short story "Three Novels I Won't Write Soon". Analysing the content from the perspective of existing definitions of the various speculative modes of writing, and Atwood's own engagement with science fiction, Gadpaille identifies features of science fiction, speculative fiction and climate fiction. These, however, despite their fundamentally speculative nature, fail to solidify into a genre or even a combination thereof due to the utter indeterminacy of the discourse they appear within. Examining stylistic idiosyncrasies, Gadpaille aligns Atwood's narrative with the discourse circulating within the spheres of contemporary ecotainment and science writing, where the speculative motifs that Gadpaille identifies on the level of content are prominently featured. From that perspective, Atwood's story is not only indicative of the permeability and arbitrariness of genre boundaries, but also of the boundaries between the various strata of contemporary cultural discourse in general.

The crossing of boundaries – between genre, media and realities – also underlies Victor Kennedy's examination of cartoon physics from the perspective of quantum mechanics and relativity theory. Cartoon physics is central in cartoons that parody contemporary science and its apostles in a way not unfamiliar to some earlier instances of science fiction. Moreover, since the medium of animation facilitates the inclusion of *nova* in much the same way as the written one, these cartoons produce the effect of cognitive estrangement typical of science fiction writing. In his analysis of the Road Runner series Kennedy shows that the seeming paradoxes of the cartoon physics employed do, in fact, conform to the principles of the measurement problem, tidal effect and superposition. As such their paradoxicality now becomes potentiality, and their satire a means of normalizing the *nova* in a world that is a *novum* in itself.

The potential of science fiction to interfere with existing realities in terms of greater equality and social justice by providing *nova* is explored and validated in Anamarija Šporčič's analysis of the relevance of science fiction to non-binary and genderqueer readers. The overview of existing SF challenges to the established notions of gender reveals a scarce and largely conventional treatment of gender issues until the 1970s, when, on the wings of second wave feminism and other civil rights movements, fictional explorations of the non-binary alternatives were (slightly) on the rise. Another incentive was provided by queer and performativity theories in the 1990s, as well as the transhumanist movement, resulting in works which translate the decisively abstract premises of these theories into various constellations of post-gender worlds. Because these worlds are essentially anchored in the same social and cultural conditions as their theoretical counterparts –

and, indeed, all the other *nova* that shape our social and cultural realities – they may serve as a point of reference for being in the world not only to non-binary and genderqueer readers but to fractalized and quantized identities in general.

An instance of such a world is Ian M. Banks' Culture civilization, featured in his Culture series. In Antonia Leach's study of *The Player of Games*, *Excession* and "The State of the Art" from this series, gender issues are addressed within a broader context of posthuman worlds, focusing primarily on the questions of corporeality and embodiment, consciousness and sentience. Banks envisions a society in which artificial intelligence is the species in control. This position, however, is not the result of a mechanical invention but of the inevitable evolutionary progress. This progress not only entails a radically higher degree of intelligence but also a moral position which corresponds to the ontological foundation of the new species: namely that of potentiality and selection. The divide between the human and posthuman is no longer a matter of essentialism but of choice. The body is rendered optional and the essence of selfhood moves to the *mind*, which here differs from that of the dominant species in degree, not in kind. In Banks' posthuman universe, Leach concludes, personhood is a matter of sentience, not biological provenience.

That the makings of such a world are already well underway is bluntly exposed in Heather Duncan's exploration of the notion of life after death in three contemporary genre narratives: a Reddit "creepypasta", an episode of TV series *Black Mirror*, and Paul La Farge's novel *The Night Ocean*. Regardless of the medium in which these narratives appear, Duncan shows, life after death is revealed as a narrative construction. In the age of smart machines, the notion of the agency of consciousness regardless of its embodiment is no longer a matter of continuity (i.e. afterlife), but the dominant mode of construction of the many selves that we embody in various ways. Identity is revealed as an assemblage of narratives, which construct the self through recognizable patterns, which can be reproduced indefinitely. And since pattern recognition, reproduction and dissemination describe the *modus operandi* of the dominant digital medium, narrative agency transcends biological constraints, and personhood is yet again revealed as a matter of sentience, and not humanness. The role of the speculative genre today, argues Duncan, is to provide the platform for the cognitive placement of the current state of affairs, where the borders between the media, genres, the real and the fictive, life and death, and the biological and non-biological are but narrative constructions – a matter of pattern rather than an essentiality.

A connection between the transgressions of genre borders, ideas of space, and current political and economic realities is further explored in the last two essays of this collection. Urša Vogrinc Javoršek examines Neil Gaiman's *Neverwhere* (1996), Iain Banks' *Transition* (2009) and China Miéville's *The City & the City* (2009) from the perspective of their conceptions of space. Her analysis reveals an evolutionary pattern in the responses of science fiction and speculative writing to the advancing "postmodernization" of the notion of space. While Gaiman's parallel Londons are an instance of Foucault's heterotopia, Bank's novel structurally and conceptually establishes a Deleuzian rhizomatous multiverse. Miéville's two cities, occupying the same temporal and spatial location in *The City & the City*, correspond to de Certeau's notion of absent space. Vogrinc Javoršek shows that the multiplication, coexistence and overlaying of spaces in these novels reflect the political, social and economic conditions at the time of their conception, and reveal their authors' leftist political agendas. Moreover, with the proliferation of parallel multiverses in these narratives, and the increasingly permeable, fluid and virtual nature of their borders, genre identity gradually dissolves into a multitude of coexisting genre potentialities which ultimately occupy the same temporal location of an all-embracing, familiar transnarrative *now*.

The nature of this *now* is also scrutinized in Pablo Gómez Muñoz's analysis of the 2013 film *Elysium* from the perspective of the on-going reorganization of spaces – territorial and otherwise – and societies in the paradigm of global neoliberalism. Like Vogrinc Javoršek, Gómez Muñoz identifies the preoccupation with redefinition of borders and border-related issues as the predominant concern in cinematic SF production at the turn of the century and beyond. Based on geopolitical, border and globalization theories, Gómez Muñoz's essay charts the unequivocal parallels between the novel forms of borders and territories – the speculative *nova* – as dictated by the socio-political and economic system in *Elysium*, and the on-going processes of the redefinition and reconstruction of the notion of borders in terms of their separation from the concepts of territory and sovereignty. These borders are superposed to serve the interests of global capital, and as such are revealed as dispersed, mobile and embodied. *Elysium* is therefore firmly anchored in the paradigm of *now*. So much so, in fact, that the solutions it offers in the form of a happy ending fall prey to the logic of the system the film allegedly criticizes. As such, Gómez Muñoz argues, the narrative of *Elysium* perpetuates rather than challenges the dominant neoliberal discourse.

Considering the fact that *Elysium* is a Hollywood all-star blockbuster, a phenomenon that relies precisely on the neoliberal dispersal, mobility and embodiment of borders in order to serve private economic interests, a different scenario could hardly be expected. But perhaps the solution lies in applying the very principle that facilitates the manipulation of borders in ways that strengthen and perpetuate the dominance of global capitalism, that is, the relativization of any boundaries inherent to the paradigm of postmodernity, to the very borders neoliberal capitalism establishes and normalizes. Ljubica Matek's review of Iva Polak's book *Futuristic Worlds in Australian Aboriginal Fiction*, which concludes this issue of *ELOPE*, provides a brief insight into an attempt to do just that.

The permeability, fluidity and arbitrariness of any boundaries within present political, economic and social conditions make the order in which the contributions are placed, as well as their distribution into individual clusters, necessarily a matter of my interpretation, based on the information that has formed my experiential horizon – my reality. As a whole, however, the essays in this collection encompass a totality of countless possible interpretations, a multiverse that, if anything, attests to the fact that as long as science fiction *does*, science fiction *is*. And even if at this particular point in space and time it may not be clear exactly what science fiction *is*, as long as it is part of contemporary narratives it significantly affects the realities we find ourselves in, as well as those that exist as a potentiality – the ones which, in the old days were referred to as the future, the past, and fiction. It may very well turn out that the role of science fiction today, in any way, shape, or form, is to help us realize that those potential (*other*) worlds interfere with ours just as the past, the future and fiction determined the world before the apocalypse. In a situation where, as we speak, the herald of the apocalypse William Gibson is re-writing his last novel because the original version relied on the speculation that Donald Trump had won the election (Kean 2017), such a role for science fiction is a scenario devoutly to be wished.

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Sci-fi, Cli-fi or Speculative Fiction: Genre and Discourse in Margaret Atwood's "Three Novels I Won't Write Soon"

ABSTRACT

Margaret Atwood's short prose piece, "Three Novels I Won't Write Soon," poses a conundrum for anyone seeking to place it within a genre. With features of science fiction, speculative fiction and a postmodern prose poem, the text addresses the topic of climate change and its concomitant fiction without offering closure. After examining and attempting to resolve the issue of genre, the paper aligns Atwood's discourse of indeterminacy with the parallel discourse of climate change as expressed in science writing, in order to account for this text's unusual structural and stylistic features.

Keywords: Atwood, Margaret; speculative fiction; science fiction; slipstream; climate change

Znanstvena fantastika, klimatska fantastika ali spekulativna fikcija: žanr in diskurz v »Three Novels I Won't Write Soon« Margaret Atwood

POVZETEK

Žanrska opredelitev kratke zgodbe Margaret Atwood »Three Novels I Won't Write Soon« povzroča nemalo težav. Z združevanjem značilnosti znanstvene fantastike, spekulativne fikcije in postmoderne pesmi v prozi se Atwoodova v tej kratki zgodbi loteva tematike klimatskih sprememb in pripadajoče proze, toda brez zaključka. Analiza nenavadnih strukturnih in stilističnih značilnosti te zgodbe v smislu razjasnitve žanrske problematike pokaže, da Atwoodin diskurz nedoločnosti zrcali paralelni diskurz o klimatskih spremembah v znanstveni publicistiki.

Ključne besede: Atwood, Margaret; spekulativna fikcija; znanstvena fantastika; slipstream, klimatske spremembe

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Sci-fi, Cli-fi or Speculative Fiction: Genre and Discourse in Margaret Atwood's "Three Novels I Won't Write Soon"

1 Introduction: Genre Matters

The place of a new publication on the bookshop's shelves used to matter enormously; should a new book be displayed in the romance section or with the chick lit? Perhaps bundled with the thrillers, or among the detective fiction? "Go into a bookshop," writes Anita Mason in *The Guardian*, "You are surrounded by classifications. Crime fiction, romance, science fiction, fantasy … These are the genres; they specialise […] There are limits and rules. Usually the book slots into its genre like a well-aimed dart" (Mason 2014). However, as readers switch to electronic shopping and digital downloads for their reading, genre categorization would seem to matter somewhat less in guiding reader choice. Nevertheless, authors still care about the location of their work along the genre spectrum, even as the tidy boxes of the previous century give way to more fluid generic markers and cross-genre production, both of which affect positioning by publishers and booksellers as well as reception by award committees. One genre critic even avers that "genre hybridity and border blurring" have rendered irrelevant the major publishing distinction between "mainstream" and other fiction (Frelik 2011, 22).[1]

Against this background of permeable genre markers, I analyse and categorise a short work by Margaret Atwood, an author whose output, reputation and "oracular sheen" (Mead 2017, 38) assure her writing plenty of reader attention, whatever its classification. In the case of "Three Novels I Won't Write Soon," the issue is complicated – not just whether this short work is science fiction or speculative fiction or both, but even whether, along with its fellow-pieces in *The Tent*, it can be classified as fiction at all. The reviewer for *The Christian Science Monitor* classified the pieces as "musings", while Hermione Lee suggested that the book contained "stories, fables, proverbs, dreams" in the pages of *The Guardian*. Like other pieces in the collection *The Tent* (2006), "Three Novels I Won't Write Soon" eschews familiar genre boundaries, claiming kinship with the essay and literary criticism, while exhibiting some of the salient characteristics of science fiction (a concern with the future and with the place of technology and nature, in both causing and remedying future catastrophe). Below, I will place the work against the genre background of Atwood's oeuvre, analyse its essayistic and fictional components, offer stylistic analysis of its rhetorical discourse, and situate this against the prevailing discourse of climate change. In brief, I seek to position this work, beyond science fiction, or even climate change fiction, as a socially-engaged science meta-narrative.

2 Atwood and Science Fiction

Atwood has often claimed to write speculative fiction rather than science fiction per se, asserting that real sci-fi must include Martians and space invasions (Atwood 2011 "Introduction," *In Other Worlds*, 6). Ever since Ursula Le Guin opened the genre question (in a 2009 article in *The Guardian*), it seems to have become mandatory to repeat Atwood's declared preference

[1] For example, Colson Whitehead's award-winning novel *The Underground Railroad* (2016), could usefully be classified as both a neo-slave narrative and speculative fiction (of the alternate history type), or perhaps even as magical realism.

that her work be classified as speculative fiction rather than sci-fi (e.g., Mead 2017, 40–41; Brooks Bouson 2010, 142; Thomas 2013, 2; Harris-Fain 2005, 13). This could be seen as a safe preference, given that all fiction engages in speculation (Keeley 2015, 169). Nevertheless, an examination of Atwood's later writing shows that her fictional territory does overlap with the genre of science fiction in its setting and motifs. Moreover, despite her disavowal, Atwood readily admits to a lifelong engagement with the genre, as both creator and consumer. After having written science fiction as a child (Atwood 2011, "Introduction," *In Other Worlds*, i), Atwood produced a string of well-received novels, many deftly incorporating the then predominantly male discourse of natural science (Deery 1997, 470), such as *Cat's Eye* (1988), followed by several forays across the genre line. First came *The Handmaid's Tale* (1985), a dystopian exploration (called a "futurist novel" by Stephanie Barbé Hammer (1990, 39), who ends by categorising the novel as a satire), set in a recognisable near future featuring some gadgetry (compunumbers and pornomarts, and Soul Scrolls), which from the vantage point of 2018 seems both prescient and dated. Certainly, the science in that novel served as the deep background to the more prominent critique of the misogynistic fundamentalist regime. Overall, *The Handmaid's Tale* deals with social power, not with technological innovation. With the MaddAddam trilogy of the early 21st century, however, Atwood leaped squarely into the field of science fiction, as *Oryx and Crake* gave us genetic modification, pigoons, rakunks and a mad scientist, Crake, every bit as inspired as Dr Frankenstein two centuries earlier. The remaining two novels in the trilogy kept the focus on a dystopian future, or to use Atwood's coinage, *ustopian* (Atwood 2011, "Dire Cartographies," *In Other Worlds*, 66), where science had first triumphed and then imploded, leaving New Age gardeners surviving in the wreckage of the Toronto conurbation, a place "ravaged by ecological disaster" (Mead 2017, 46).[2]

Nevertheless, alongside this longer fiction Atwood was producing a stream of shorter pieces, generically unplaceable for the most part, in *Murder in the Dark* (1983), *Good Bones* (1992), *The Tent* (2006) and *Stone Mattress* (2014). *The Cambridge Introduction to Margaret Atwood* sees these pieces as straddling "the gap between story, essay and prose poem" (Macpherson 2010, 87), suggesting some unease with genre positioning. Nevertheless, these prose efforts, far from being awkward fillers of inter-generic space, are dense hubs of speculation about the human condition, as in the title story of *The Tent*, which allegorizes human experience as a form of imprisonment within a tent of words that offers protection from the howling wilderness beyond. In this compact work, as in other materials from that collection, Atwood was freed from genre restrictions, and thus able to play with concepts from psychology, philosophy and environmental science, while adapting familiar genre motifs and structures, with amoeba-like flexibility.

3 The Shifting Topography of Genre

3.1 Science Fiction

Along the way, Atwood has offered considerable direct comment on her understanding of the genre of science fiction with its terminological "bendiness" (Atwood 2011, "Introduction," *In Other Worlds*, 7), notably in the Ellmann Lectures delivered in Georgia in 2010, and in the resulting collection *In Other Worlds*. In this, Atwood traces her own engagement with science fiction from an adolescent consumer of "creepy tales" (Atwood 2011, 39), to a viewer of B-movies

[2] See Chris Vials for an analysis of the MaddAddam trilogy as a dystopian critique of neoliberalism, and J. Paul Narkunas for a related placement of the trilogy as a speculative anti-capitalist work.

with sci fi themes (Atwood 2011, 40). Throughout her analysis, Atwood keeps one eye on the genre boundaries, apparently motivated by that remark made by fellow author Ursula Le Guin (Atwood 2011, "Introduction," *In Other Worlds*, 5–6). Anxious to disavow any disdain for what is often seen as lowbrow or popular, Atwood embarks on a history of the genre (2011, 56–57), followed by a persuasive anatomy of science fiction's functions: to "explore the nature and limits of what it means to be human," to "interrogate social organization by showing what things might be like if we rearranged them" (2011, 62), and to "explore the outer reaches of the imagination by taking us boldly where no man has gone before" (2011, 63). Crucially, Atwood associates science fiction with myth (in the mode of the theorist, Northrop Frye), claiming that this genre may have "subsumed the mythic areas abandoned by literature" (2011, 56) when realism took over. In the pages of science fiction, then, Atwood sees readers as seeking meta-stories that shape our conceptions of where we stand in the world, what mysteries beset us and what, if anything, we can do about the unknown future that haunts the normative work of science fiction (2011, 55). "It's never had a happy ending," Atwood affirms while reviewing another work of science fiction, "not so far" (2011, 131).

3.2 Speculative Fiction

Since Atwood prefers the label "speculative fiction" for her works, and some critics accept it as a close fit for "Three Novels I Won't Write Soon" (Rogerson 2009, 89), it is worth exploring the accepted definitions of the term, some of which immediately subdivide the field:

> The term "speculative fiction" has three historically located meanings: a subgenre of science fiction that deals with human rather than technological problems, a genre distinct from and opposite to science fiction in its exclusive focus on possible futures, and a super category for all genres that deliberately depart from imitating "consensus reality" of everyday experience. (Oziewicz 2017)

How likely it is that the fictional scenario will eventually occur forms the main foundation of Atwood's own distinction between science fiction and what she writes. The degree of probability of future events marks the boundary between Martians (science fiction) and climate change or genetic modification (speculative fiction). This, however, turns out to be a less secure demarcation than one might think. Any "predictive value" (Oziewicz 2017) could rapidly be overtaken by time and technology, not to mention that the scenarios presented in "Three Novels" seem to deliberately refuse prediction.

Juliet McKenna resorts to geographical metaphor to explain the elusive difference between science fiction and speculative fiction: "Speculative fiction prompts the reader to pay so much more attention, looking for the details that make sense of this strange world. Reading speculative fiction isn't arriving in Manchester. It's finding yourself in Outer Mongolia with no help from Lonely Planet or a Rough Guide" (McKenna 2014). Intuitively one feels that Atwood would appreciate McKenna's analogy, though it does not contribute much to a sound theoretical genre distinction, except for the sense-making details. Speculative fiction should offer a deep illusion of reality, unlike science fiction, where the scaffold of science may suffice.

Also useful is Oziewicz's assertion that speculative fiction began with an oppositional stance, one that flourished into a sub-genre of feminist speculative fiction in the 1970s and 1980s (for which Atwood and Le Guin are provided as prime examples). There is something tautological about explaining Atwood's work by reference to a category of which she is the co-constituent; nevertheless, the concept of oppositionality does capture the deliberate a-normality of her shorter pieces.

3.3 Related Genre Distinctions

A newer candidate for the classification of some of Atwood's work is "slipstream" fiction. Coined in reaction to the term "mainstream" (Frelik 2011, 21), slipstream still boasts only indeterminate definitions and boundaries – although, as Frelik explains, this is the point. "Slipstream is what falls through the cracks of exclusionary definitions," we are told (Frelik 2011, 27), even though a bookstore in London has apparently adopted the word as a useful shelving – and presumably sales – category (Frelik 2011, 30). Discussions of slipstream as an actual *sub*-genre of science fiction appear in comprehensive overview collections such as *The Oxford Handbook of Science Fiction* (2014) and *The Routledge Companion to Science Fiction* (2009), suggesting its incomplete emergence as a free-standing genre. Atwood and her work are often among the "usual suspects" in a list of slipstream works (Frelik 2011, 32), and certainly the generic flexibility noted earlier does ally many of her shorter pieces with this classification. However, both as category and terminology, the term slipstream represents more a convenience for the critic and reviewer rather than a target genre parameter for the writer. Atwood, for instance, wrote many of the related short pieces in response to external prompts from the real world, to which she has been an active contributor.

Before adopting slipstream as a category for such literary leftovers, it is sobering to sample the proliferation of terms for other splinter factions of experimental fiction. In *21st Century Stories*, Beamer and Wolfe provide a useful list of the possibilities: "Slipstream. Interstitial. Transrealism. New Weird. Nonrealist fiction. New Wave Fabulism. Postmodern Fantasy. Postgenre Fiction. Cross-genre. Span fiction. Artists without Borders. New Humanist. Fantastika. Liminal Fantasy" (Beamer and Wolfe 2008, 16). Any or all of these could be argued as descriptors for Atwood's "Three Novels I Won't Write Soon," although some more readily than others. The immediately relevant aspect of the slipstream genre definition, however, is its common inclusion of the feature of meta-narrativity (Frelik 2011, 40).

4 Three Unwritten Novels

In reviewing her youthful enthusiasm for the *Martian Chronicles* and *The Attack of the 60-foot Woman*, Atwood establishes some of the narrative patterns that emerge to shape "Three Novels I Won't Write Soon." Taking the title as the first indicator of genre, it is apparent that the number recalls both the reflexive, absurdist play of a work like Pirandello's *Six Characters in Search of an Author* (1921: *Sei personaggi in cerca d'autore*) and the more contemporary habit of personal list-making (e.g. bucket lists and a Top Ten or Top 50 of anything and everything). The first deals with the deconstruction of literary genre into constituent parts, in a manner designed to draw attention to the playfully fictive nature of the work, which became a familiar feature of much mid-century writing. The second listing trend evokes the flattened life experience of the digital age, in which the quantifying of personal experience has become a substitute for lived experience.[3] Thoughts and even experiences are transformed by digital omni-communicativeness into data points – to be rapidly consumed and equally readily discarded. Atwood's title harnesses the playfulness of the Pirandello title to the earnest, but shallow self-construction of the contemporary listing phenomenon. Atwood's characters, Chris and Amanda, are certainly capable of such list-making, just as they are assigned other deliberately trendy adaptations to their habitat: e.g., the decaf coffee and eco-friendly refrigerators in *Worm Zero*.

[3] A similar recent Canadian example is Zsuzsi Gartner's "Eleven Orphaned Short-Story Openings, Looking for a Loving Home" in *Geist* 88 (2013): 31.

Each of Atwood's three projected un-novels uncoils through a series of formulaic futuristic scenarios – although invariably with Atwood's deflationary twist, they often feature the "ordinary dirt" of human lives (Atwood 2011, 127). Atwood's "three novels" are clearly derivative of the whole previous century of science fiction, having imported not just the hypotheses of science, but the motifs through which western popular culture has been explaining science to itself for 100 years (e.g., extinction, gigantism and survivalism). In recombining these, Atwood creates a "space of literary play" (Gadpaille 2008, 13; cf. Wisker 2011, 174), where unspeakable eventualities may be contemplated, even though Atwood's persona mainly softens the endings, being what one critic has called "a buoyant doomsayer" (Mead 2017, 38). In this short work, these three disastrous eventualities all involve eco-catastrophe, each one progressively more ridiculous, even as their implications become more extreme. Impressed by the bathetic parabola, one reviewer used the headline, "Beware the sponge that ate Florida" (Lee 2006). The three novels that Atwood's persona negates all evoke the parameters of climate change fiction, or cli-fi, and could be loosely paralleled to the parts of her *ustopian* oeuvre, the MaddAddam trilogy.

4.1 Word Play in the Titles

The three-part work is divided by its declared subject of "three" novels, the titles of which each involve multiple associative levels. The first, *Worm Zero* (Atwood 2006, 85), echoes several established phrasings, from the *ground zero* of the nuclear and 9/11 ages, through the scientific concept of *absolute zero*, to the name of a popular brand of soda. Only the bathetic substitute noun *worm* separates this title from serious issues of globalised consumerism and equally globalised destruction. It is by similarly dense connotation that *Spongedeath,* the second title, works on the reader (Atwood 2006, 88). *Spongedeath* recalls the medical concept of *brain death*, as well as the character from the children's television program *Sponge Bob Square Pants*, itself the creation of a marine biologist. The human finality of the first connotation combats the cheery environmental optimism of the second, to produce the overall burlesque effect of Atwood's negated novel scenarios. The choice of title for the third novel that won't be written differs from the first two. *Beetleplunge* is no sooner announced as an insight and gift "from the unknown" than called into question:

> That word – if it is a word – might look quite stunning on the jacket of a book. Should it be "Beetle Plunge," two words? Or possibly "Beetle Plummet?" Or perhaps "Beetle Descent," which might sound more literary? (Atwood 2006, 90)

In this case, the speaker inserts an associative trail before the reader can even begin to ponder the possible relevance of *Beetlejuice*, the 1986 fantasy film by Tim Burton, whose title constitutes another strange amalgam of the normative (juice) with the lower forms of animate life (beetles).[4] What differs about this third title is the metamorphoses it subsequently undergoes as the speaker entertains various grotesque mis-hearings of the phrase:

> Maybe I misheard. Maybe it was "Bottle Plunge." . . . But maybe it wasn't "Bottle Plunge." Now that I think of it, the phrase may have been "Brutal Purge." (Atwood 2006, 91–92)

With "brutal purge" there comes a serious shift in the genre and atmosphere of the projected third novel. Unlike the first two, which draw motifs from B-movie romps such as *The Thing* (1951), *The Blob* (1958), *Day the World Ended* (1955), *The Deadly Mantis* (1957), *The Giant*

[4] And a pun on the name of the star Betelgeuse.

Claw (1957), *Attack of the Giant Leeches* (1959) or *Creature from the Black Lagoon* (1954), this un-novel could never belong to the genre of science fiction, or even environmental fiction (cli-fi). *Brutal purge* connotes the world of fascist regimes and real mass killings, of which the 20th-century had no shortage. Atwood's speaker seems surprised by the direction this third novel's scenario has taken, and not in complete control of the script. The phrase "now I think of it," evokes the creative process, the mid-stream brainstorming about narrative parabolas that marks a writer's consciousness. As a result, the reader feels a privileged glimpse into the associative process of creativity, the spiral movement of the mind as it considers and rejects possibilities. However, this switch in genre shuts down the plotting of the third un-novel:

> Anyway, if it's "Brutal Purge," I can't see a way forward. Chris and Amanda are very likeable. They have straight teeth, trim waists, clean socks, and the best of intentions. They don't belong in a book like that, and if they stray into it by accident they won't come out of it alive. (Atwood 2006, 92)

Stepping back from the constructed randomness of the drift from *Beetleplunge* to *Brutal purge*, it becomes apparent that Atwood has taken her writer persona on a journey from comforting formulaic fiction to discomforting political realism. It would be tempting to read this as an autobiographical metanarrative or even political allegory, but the certainties of critical labelling are all undercut by the pervasive refusal to commit to any assertion, as a close look at the text will reveal in the next section.

4.2 Creative Indeterminacy

Atwood's voiced persona begins with an apparent statement of truth to describe *Worm Zero*: "In this novel all the worms die" (Atwood 2006, 85). It is finite, absolute and inclusive. However, the next few sentences progressively open the category of "worm" to speculate on what a "worm proper" is. Uncertainty begins to erode the first proposition before the end of paragraph one: "Should grubs be included? Should maggots?" (85). The persona displays considerable knowledge about the vital functions of real earthworms (soil creation, surface extrusion, rain penetration), but soon this science-based scenario ruptures on the writer's creative uncertainty about plot: "Who shall we follow in the course of this doleful story?" (86) Structure, characterization and dialogue are no more determinate; the persona cannot decide whether the projected novel's final words should be uttered by Chris or Amanda, the bloodless cardboard hero and heroine who had "great sex" in "Chapter One" (Atwood 2006, 86).

In shallow imitation of characters from mimetic realism, Chris and Amanda possess the trappings of modern lives, the eco-friendly refrigerator, the instant coffee and the summer cottage, so typical of middle-class Canadian life. Beyond these solid points of reference, uncertainty prevails in the projected narrative, as the persona debates whether giving Amanda the final piece of dialogue would show that her "character has developed" (Atwood 2006, 88). Sly satire abounds on suburban life, the clichés of fiction criticism, and above all on the timid sacrifices made by the low-carb, gluten-free, carbon-neutral generation, shoring up their lives against climate disaster with minor capitulations meant to appease the climate gods.

In the second un-novel, these stratagems are satirized as "décor", the one regrettable waste as the giant sponge approaches Chris and Amanda's condo from a reef off the coast of Florida (88). Unlike the scenarios from many science fiction movies, there is no mad scientist in *Spongedeath*, and thus no way to blame human pride or evil for the formidable "sponge on the rampage". Nor

will it yield to Amanda's pathetically optimistic home remedy: "Could we sprinkle salt on it?" (89). The writer's voice contemplates elevating Chris to narrative hero: "[S]hould he be allowed to defeat the monstrous bath accessory and save the day, for Florida, for America, and ultimately for humanity?" (89). However, the scenario undermines the horror of gigantism by seeing the sponge, not as a natural phenomenon, but as an accessory to 21st-century hygiene. Nor is this a climax, but a pastiche of narrative climax, one from which the voice retreats, claiming that "as a writer loyal to the truth" (90), they cannot yet attempt this narrative project. With a wave of textual hesitations, digressions, conditionals and modals, Atwood's voice abandons the scenario, leaving the beach condos still under threat.

With *Beetleplunge*, the third un-novel, the voice wastes even less time sketching in the plot. The syntax rushes towards indeterminacy, even discarding the title along the way: "Scrap the title! This is now a novel without a name" (90). Ironically, this refusal to name becomes one of the few assertions – though a negative one – in the short textual space before the plot careers off the road with Chris and Amanda's green Volkswagen to reappear in the plot of a thriller instead of a climate fiction novel.

5 The Language of Climate Change

If Atwood has a claim to science/speculative fiction, then it must rest on her eco-critical engagement with humanity's future in the MaddAddam trilogy. This classification might also fit "Three Novels", since, I will argue, it presents a progressive exploration of the necessary instability of language and of our treasured cultural discourses while the planet disintegrates around us. To advance this proposition, Atwood proceeds obliquely, advancing the three fictional climate change scenarios. Each posits a future in which the earth's natural systems have failed, some crucial link in the biological chain that binds the global habitat has snapped – worms, sponges or beetles – and humankind is left facing the consequences, denied even the comforts of modern technology. None of this description is emotionally engaging, the projected events in the "three novels" being as two-dimensional as a bullet-point list, and having what one critic called "a cartoon-like clarity" (Hammer 1990, 41). Hammer used this phrase to characterise *The Handmaid's Tale*, but it does capture the clear outlines of the disaster scenario in the short works under dicussion: "In this novel a sponge located on a reef near the coast of Florida begins to grow at a very rapid rate. Soon it has reached the shore and is oozing inland" (Atwood 2006, 88). This cartoon-like clarity dominates *Worm Zero* and *Spongedeath*, but evaporates rapidly in *Beetleplunge*, replaced by a series of indeterminate "maybe" propositions.

Indeed, as readily as the three novels are proposed, they are withdrawn, in sentences that withhold meaning through denial, fragmentation, contradiction, questions, indecision and spontaneous digressions. Finding a plain declarative statement in the short text is a challenge after the opening sentence ("In this novel all the worms die."). It is almost as if Atwood had set herself the challenge of writing without the standard affirmation of the statement sentence: subject verb object, someone acting definitively upon something. Instead, there are fragments: "Those inside fish. Those inside dogs" (85). Questions dominate whole paragraphs: "Should these be his last words? Should the sponge fall upon him with a soft but deadly glop?" (89). Negative modal shading calls into question – not reality, for there is arguably no real object of relation in a projected novel scenario – but confidence-in-reality: "a small, still-wriggling worm *might be discovered* in the corner of the garden, copulating with itself"; "it *might be* as well not to begin" (88, 90; my emphasis). These stylistic markers of uncertainty function not to

describe climate change scenarios, but to re-enact the discourse in which western society has been discussing climate change.

The uncertainty that prevails in the discourse of climate change has been the subject of research by Hermine Penz, a contemporary theorist of eco-linguistics. After establishing that climate science expresses its findings in "degrees of certainty and probability" (Penz 2015, 8), Penz deals with the challenge of translating such discourse, relying as it does on risk and probability rather than 100% certain outcomes. Similarly, David Wallace-Wells has referred to the "timid language of scientific probability", blaming it on "our uncertainty about uncertainty" (Wallace-Wells 2017, n. p.). Undeniably, early warnings about climate change (or global warming, as it was once termed) were hedged with probability expressions including *possibly*, *likely*, *probably*, and the range of modals from *might* to *could*.

More recently, Andrew Heintzman has even used the word "bipolar" to define the "sanest and most logical position for a Canadian environmentalist" (Heintzman 2016, 10). Like Penz, this Canadian reviewer deals with the uncertain, two-faced nature of the environmental debate.[5] Unlike Penz, whose analysis involves the vocabulary and structure of modality, Heintzman addresses the dialectic of outlook in climate change analysis:

> Being an environmentalist today is to be tossed back and forth between extreme pessimism and optimism. Seen from one angle, things have never been worse: species are going extinct at an alarming rate, forests are dwindling globally and greenhouse gas emissions are continuing to soar past levels that we used to think spelled likely planetary doom. And yet we have never been better positioned to remedy these problems than we are today (Heintzman 2016, 10).

In Atwood's "Three Novels" we find echoes of both Penz's linguistic probability dilemma and Heintzman's "strange dialectic" – and his phrase "planetary doom" encapsulates exactly the mood to which Atwood's piece responds. The first two of her narratively framed doomsday scenarios start from a plausible scientific base, project rapid environmental change, human inflexibility and the ultimate failure of the planet and its environment to support human needs and desires. Moreover, as in climate change writing, the text is dominated by negative modality – all of its syntactical features working together to withdraw any certainty about either the projected novel plots or the global future to which they refer.

6 Conclusion: Not Quite Cli-fi

"Three Novels" is thus debarred from the category of science fiction, because science fiction forms the topic rather than the genre, and from the sub-classification of speculative fiction – not because the work isn't speculative, but because it may not be fiction at all. In its layered reflexivity, where the style becomes the meaning, it perhaps most closely approximates a postmodern prose poem, but one where climate science and the human will to tackle it, whether politically or linguistically – take the foreground. The clichés of ecotainment are paraded before us as the persona floats narrative scenarios, but even these are revealed as unsatisfying when placed against the indeterminacy that dominates the piece.

[5] This is true even without the phenomenon of climate change denial. A study in 2008 established that news coverage of the issue of climate change had succeeded in giving more credibility to the denial side of the debate in the otherwise laudable quest for balanced journalism (Boykoff).

If, as Atwood has maintained, science fiction subsumed the mythical area abandoned by modern literature (Atwood 2011, 56), then the minimalist science factoids in "Three Novels" are feebly gesturing towards a mythical system that is continuously undercut by human insistence on a life without structured belief. Chris and Amanda act out the genre and gender scenarios of popular fiction and the tabloids, easy to satirise, but also deeply woven into the desires of a consumer culture. Worm death is plausible,[6] giant sponges less so, but both allow for Northrop Frye's mythical cycle of death, replacement and rebirth to unfold. Brutal purges are another matter entirely; they interrupt both real human lives and the cultural and literary activities that give meaning to such lives. Read in this light, "Three Novels" emerges less as speculative fiction than as an epistemological thought experiment, a suggestive hypothesis, unproven and unprovable.

"Maybe there shouldn't be novels, anymore," says Canadian writer Stephen Marche; "Maybe there should be something else, something new" (Marche 2017, 18). Speaking in response to the endless Canadian concern with appropriation of voice, Marche's position would absolve writers of the dangerous responsibility of character creation and animation. Read in the context of this experimental, perhaps speculative almost-fiction, the remark voices the implicit suggestion at the end of "Three Novels": that the genre of narrative fiction has exhausted itself in projecting entertaining pseudo-futures for humankind. Despite having great sex – "in Chapter One, or possibly Chapter Two" (Atwood 2006, 86), characters like Chris and Amanda may have no progeny, no literary future. Instead, the meditative persona, a "writer loyal to the truth," ends in contemplating the extinction of the impulse or energy to create fiction in the realistic climate of global political oppression – the world of the brutal purge, of *The Handmaid's Tale*, in effect.

There is, however, a caveat: before reading "Three Novels" as a compact admission of artistic inadequacy, we must confront the destabilizing effect of its truth-allergic syntax. Distanced from the real by the I-persona's playful digressiveness, the title denial of action and the endless regress of the three novel titles, the text ultimately asserts only its own inability to assert. Through fragmentation, questioning, conditionals and negative modality, "Three Novels I Won't Write Soon" plays with the plastic material of science-fiction scenarios, only to dismantle the resulting construct as a radically inappropriate vehicle to contain global horrors much more contingent than blobs or giant sponges. The human world has been dreaming of disaster through the medium of popular science fiction. The indeterminacy haunting such works at the discourse level both echoes the prose of climate change science and implicates the reader – both the implied one and the real reader with a paperback or an e-reader in hand – in responsibility for the indeterminate future. For the future with climate change can be nothing other than a conditional sentence, tied to human reality only by the devastating banality of the lexicon of modern technology and its artefacts.

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[6] Compare the real panic about disappearing honey bees. See, for example, the *National Geographic* feature by Catherine Zuckerman, "What Happens if the Honeybees Disappear?" (*National Geographic*, October 2017).

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The Gravity of Cartoon Physics; or, Schrödinger's Coyote

ABSTRACT

When Wile E. Coyote goes off a cliff, instead of falling in a parabolic arc, he comes to a halt in mid-air, hangs there until he realizes that he is no longer on solid ground, then falls. Many critics and, indeed, the creators of the cartoons themselves, describe this as "cartoon physics," which breaks the rules that appear to govern the real world, but several principles of modern physics are in fact depicted here. He is both falling and not falling; when he is able to observe his situation, the laws of quantum physics catch up with him. This, and the principle of relativity, govern the apparent paradoxes of the cartoon world. Although the Coyote was, according to his creators, conceived as a parody of a modern scientist and played for laughs, he illustrates several paradoxes of modern science and the unease with which these are widely viewed. These cartoon physics have become a meme that has developed in later animated cartoons and live-action science fiction films, and is now even a part of modern-day science textbooks.

Keywords: science fiction; cartoons; physics; Roadrunner; Coyote; metaphor

Gravitacija v fiziki risank; ali Schrödingerjev kojot

POVZETEK

Ko Kojot v risanki Cestni dirkač zleti čez previs, se, namesto da bi padel v paraboličnem loku, ustavi v zraku in tam obvisi. Padati začne šele, ko se zave, da ni več na trdnih tleh. Mnogi kritiki, pa tudi sami ustvarjalci risank, pravijo temu "fizika risank", ki krši pravila, za katere se zdi, da vladajo v resničnem svetu. Toda v "fiziki risank" lahko opazimo kar nekaj principov moderne fizike. Kojot pada in ne pada; ko opazi svoj položaj, je podvržen zakonitostim kvantne fizike. Navideznim paradoksom v svetu risank vladata kvantna fizika in princip relativnosti. Čeprav je bil Kojot ustvarjen kot smešna parodija sodobnega znanstvenika, njegov lik pooseblja številne paradokse sodobne znanosti, kot tudi neugodje, ki jih ti sprožajo v širši javnosti. Tovrstni primeri fizike risank so postali sestavni del kulturnega spomina, ki se je razvijal v poznejših animiranih risankah in igranih znanstvenofantastičnih filmih, zdaj pa se celo pojavlja v sodobnih znanstvenih priročnikih.

Ključne besede: znanstvena fantastika; risanke; fizika; Cestni dirkač; Kojot; metafora

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The Gravity of Cartoon Physics; or, Schrödinger's Coyote

1 Introduction

It is often said that science fiction is a genre that has recently moved from the fringe to the mainstream, but a strong argument can be made that it has always been in the mainstream, or at least close to it, considering the canonical authors, including Jonathan Swift, Mary Shelley, H.G. Wells, Robert Louis Stevenson and Margaret Atwood, who have written works with scientific themes. Many of these themes and characters have made it into the popular lexicon as archetypes and memes, like Frankenstein's monster and the mad scientist who created him. The Floating Island in *Gulliver's Travels* (Swift 1726) is a parody of the scientific establishment of the time, and throughout the genre's history parody has developed side-by-side with more serious treatments.

Modern science fiction novels and films make use of these fictional conventions, and, since these fictions are based to a large extent on extant scientific principles, they often reflect popular perceptions of current scientific research and discoveries. The makers of the popular Warner Brothers Road Runner cartoon series, which began in 1949 and continues to be produced today, parodied these conventions of science and scientists in their creation of Wile E. Coyote, who is constantly frustrated in his attempts to catch the Road Runner with an array of flawed high-tech equipment. Director Chuck Jones claimed his cartoons flout scientific conventions, but ironically, their paradoxical visual depictions of accepted principles actually illustrate many of the scientific discoveries of the twentieth century. In this paper I will show how some of these scientific principles, such as relativity and quantum physics, are addressed both in these animated cartoons and in later live action parodies of science fiction, such as the film *The Adventures of Buckaroo Banzai Across the Eighth Dimension* (Richter 1984). Several astute critics have pointed out that this comic flouting of conventions reveals deeply-held anxieties about the direction our technology-driven society is taking. As Istvan Csicsery-Ronay Jr. says, "SF [Science Fiction] […] became a barometer for social anxieties about future shock" (Csicsery-Ronay 2015, 31).

2 The Icons of Science Fiction

The conventions of science fiction are enumerated in a list of the "items and icons" of science fiction perceived by "the Common Reader" in Ursula Le Guin's Introduction to *The Norton Book of Science Fiction.* They include

> the future
> 'futuristic' science, technology, weaponry, cities, etc.
> spaceships, space voyages
> time machines, time travel
> other worlds
> alien beings
> monsters
> robots
> mutants

parapsychology

mad scientists (Le Guin 1993, 1999, 22)

All of these topics have appeared in science fiction novels, stories and films, as well as animated cartoons, including several Warner Brothers Bugs Bunny cartoons featuring Marvin the Martian and Frankenstein's monster (Avery et al. 1937–1964), time travel in The Wayback Machine in the Peabody and Sherman segments of *The Adventures of Rocky and Bullwinkle* (Ward and Scott 1959–1964), the future in *The Jetsons* (Hanna and Barbera 1962–1963), and all of these, plus mad scientists, in *Dexter's Laboratory* (Tartakovsky 1996–2003).[1]

Science fiction of the mid-twentieth century, particularly the subgenre known as "hard" science fiction, focused as much on technological advances of the time as it did on speculation about the future. Three aspects of twentieth-century scientific discoveries in particular stand out in the Warner Brothers' Road Runner cartoons: the effect of gravity on coyotes; the ability of roadrunners to go through solid matter; and Wile E. Coyote as the archetype of the "mad scientist."[2] The Coyote is enamoured of the technology featured in contemporary science fiction, such as rockets, seductive gadgets, brand-names, and ever more potent weaponry. Gwyneth Jones describes how these items encapsulate the themes of early twentieth-century science fiction, partly in response to the visual imagery featured on the covers of pulp science fiction magazines:

> In its literary version, the genre had quickly developed a number of signature and easily visualized memes, those rockets and other vehicles for space flight, robots, aliens and alien realms, and a variety of gadgets and gadgeteers signifying a world of technological change. All of these would also became key visual attractions of the form, thanks, in part, to those alluring, four-color covers of the many pulp magazines that helped breathe life into early SF. (Jones 2003, 124)

The bright covers of those science fiction magazines were the precursors of an explosion of science fiction themes in animated cartoons, linking cartoons to science fiction literature.

Increased popular awareness of scientific developments in turn paved the way for popular acceptance of and demand for more technological development. As physicist Lawrence Krauss shows in *The Physics of Star Trek*, technologies that not too long ago were firmly considered to be solely in the realm of the imagination have now become commonplace in our lives (Krauss 2007). Jones confirms this:

> In the twenty-first century, the other-worldly, sacred status of many of the genre's classic icons is rapidly changing. Rockets and space stations remain marginal to most people's lives, but hand-held global communicators (their eerie resemblance to the Star Trek version owing more to ergonomics than SF prescience) have passed into the mundane. Cyborgs, virtual environments, genetically engineered plants, animals and even humans, artificial intelligence, cataclysmic climate change, mind-reading machines, quantum

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1 I focus here on a discussion of animated cartoons, but there is a long history of science themes in newspaper and comic book cartoons as well, such as Gary Larson's *Far Side*. See Higdon (Higdon 1994).

2 The first two of these recurring themes in the cartoons can be viewed as metaphoric responses to the apparent paradoxes in recent scientific discoveries; the third reflects a comic version of the public perception of science. Stephen R. Gould (not the famous paleobiologist Stephen Jay Gould) notes that "new looney toon analysis reveals that these, seemingly nonsensical, phenomena can be described by logical laws similar to those in our world. Nonsensical events are by no means limited to the Looniverse. Laws that govern our own Universe often seem contrary to common sense" (Gould 1993).

> computing – it seems as if almost every wild, innovative, SF plot device has been annexed by the everyday. (Jones 2003, 172–73)

Krauss canvassed his colleagues and found that many of them had been fans of the *Star Trek* series in their youth, and attributed their lifelong interest in scientific research to this early influence. Science and science fiction thus could be said to have a symbiotic relationship; scientific discoveries transform into urban myth, and from there into the repetitive narrative of the cartoon, where iterative action takes over the comforting role that prayer used to command. The very predictability serves to disperse future shock.

3 Cartoon Logic and the Suspension of Normal Rules

Popular cartoons are generally humorous, depending on sight (and occasionally sound) gags that upend viewers' expectations. In many cases this "cartoon logic" goes hand-in-hand with special effects to create "other" environments, particularly when depicting environments in space and on other planets and when satirizing science and "technocracy." Mark O'Donnell formulated a set of Rules of Cartoon Physics that summarise this logic:

> I: Any body suspended in space will remain in space until made aware of its situation.
>
> II: Any body in motion will tend to remain in motion until solid matter intervenes suddenly.
>
> III: Any body passing through solid matter will leave a perforation conforming to its perimeter.
>
> IV: The time required for an object to fall twenty stories is greater than or equal to the time it takes for whoever knocked it off the ledge to spiral down twenty flights to attempt to capture it unbroken.
>
> V: All principles of gravity are negated by fear.
>
> VII: Certain bodies can pass through solid walls painted to resemble tunnel entrances; others cannot.
>
> VIII: Any violent rearrangement of feline matter is impermanent.
>
> IX: Everything falls faster than an anvil. (O'Donnell 1980)

J.P. Telotte explains how and why animators applied this kind of logic:

> One type simply dissolves that narrative frame, so that the entire film seems to operate according to a dream logic that makes maximum use of animation's properties of exaggeration and transformation. It does so by exploiting the cartoon's fundamental plasticity, capitalizing on its entertaining capacity for taking viewers away from the real or the expected, and centering its action in a world governed by the sort of "gravity-defying tricks" and visual surprises that, Esther Leslie suggests, "were the essence of cartooning" in its early days. (Telotte 2017, 32)

This variant on "dream logic" appears in many animated cartoons, such as those produced by the Warner Brothers studios, as well as in live-action films, supplemented with special effects, to create visual humour based on incongruity. Other animators and studios, such as Disney, make use of a different, more realistic, style:

> In contrast, another approach follows what Leslie terms a "realist injunction" of the sort that would eventually become associated with Disney-style animation of the later

> 1930s – a style in which "gravity" and other laws actually play a kind of normalizing role, as characters squash, stretch, rebound from, and anticipate movements, and as events are more naturalistically motivated and depicted. (Telotte 2017, 32)[3]

Disney's animators do, however, make use of surrealistic animation tricks and surprises when it suits their purposes, as in both the supernatural and scientific sections of *Fantasia* (Walt Disney Productions 1940).

This was a movement parallel to the development of perspective in Renaissance painting, where a scientific discovery facilitated the medium's ever closer approximation of mimesis: realism. Cartoon logic revises this mimetic agenda, however, and instigates a disruption of realism, using the tools and skills that could reproduce the real to offer a counter-realism instead. Animated films of the 1920s and 30s used special effects and visual metaphors to create an imagined space impossible to depict with the effects available to live-action directors of the time; animators, in contrast, were able to draw anything that they could imagine. In live-action films, as the technology developed, various special effects were used to depict this imagined space, such as the stop-motion animation techniques of eminent visual effects designer Ray Harryhausen, as well as makeup and prosthetics (Pierson 2002, 71). Modern directors are able to create similar effects using CGI, but some filmmakers go beyond using them to create realistic-looking effects, instead applying them to emulate cartoon logic, bringing the relation between live action and animation full circle. This is a case where technological advances in filmmaking led to new ways of seeing.

More recently, similar techniques have been used to create an aura of realism in video games using algorithms called "physics engines":

> To keep the game's action consistent with players' physical intuitions, the game's physics engine calculates all the relevant interactions. But to make the action also outlandishly cartoony, the computer plays loose with some of the numbers used in its engine. For instance, it assigns cars the elasticity of balloons and makes hammers as heavy as anvils. When a hammer blow hits a car, the vehicle temporarily squashes flat – cartoon fashion – and then springs back again. Overweight harpoons hit like missiles, powerful enough to penetrate steel. It's all in the parameters of the equations. For game developers and filmmakers who know how to manipulate such representations of physical reality, even the immutable laws of physics can give wings to their fancy. (Weiss 2002)

In essence, the programmers use one physics engine to emulate realistic responses to Newtonian forces, and another to modify these responses in order to create incongruity for the sake of humour. This incongruity won't work unless the audience can perceive it; therefore, cartoon makers and game designers needed to reference the common-sense physics of the everyday, while aligning their violations with esoteric science knowledge. Cartoons such as Road Runner, like video games, thus have two audience levels, like parables of old.

The techniques of animation, both analogue and digital, closely reflect the literary and visual techniques developed by science fiction authors and filmmakers when they created a genre of fiction that is, in Darko Suvin's estimation, a "literature of cognitive estrangement" (Suvin 1972, 372), "whose main formal device is an imaginative framework alternative to the author's

[3] It is both ironic and fitting that the Warner Bros. cartoons that create humour by satirizing science do so by inverting the laws of physics, while Disney's productions, which for the most part are updated retellings of traditional fairy tales and fantasies, rely on a realistic style.

empirical environment" (375). In cartoons, at least of the comic kind, this alternative universe is a place where actions have different outcomes from those we expect in day-to-day life, but at the same time are largely preordained. Although we don't want the Coyote to go hungry, we would prefer not to have the Road Runner killed. The liminality of this world, where the laws of nature appear to function somewhere in between those of realism and fantasy, is central to the kind of wish-fulfilment urge that keeps the Coyote returning to the Acme catalogue time after time, when all his experience should tell him their gadgets won't work. Wile E. Coyote is preordained to fail and the Road Runner to succeed, not because of the rules of fairy-tale, fantasy or tragedy ethics, but because of director Chuck Jones's Rules.[4]

In the imaginary world of the Road Runner cartoons, like any created world of science fiction or fantasy, the author still follows a set of internal rules that create a feeling of consistency for the viewer. Science fiction follows the rules of naturalism, often projected into the future, but in this case, the present. Here, the science fiction elements work for two purposes, humour and satire. The Rules of Animation conform to the same requirement for internal consistency that govern science fiction and fantasy. As Csicsery-Ronay argues, science fiction animation simultaneously respects and defies the audience's knowledge of real physics (such as the knowledge that coyotes cannot really defy gravity). The appeal in thus visually breaking the rules that we know bind us he calls "lyrical physics" (Csicsery-Ronay 2015, 37); when he says "ultimately it is all about gravity," he is correct. We all know, or sometimes wish to believe, that rules can be broken, except for this one.

Gwyneth Jones argues, however, for an intertextual dimension to the use of cartoon special effects, as she outlines a kind of "arms race" between the print and visual arts:

> At the same time, the most visual of popular print fiction genres is challenged by ever more rapid developments in the entertainment media. Gone are the days when the B-movies could not hope to provide the same spectacular special effects, eye-kicks and entrancing false realities that could be created by the reader's and the writer's inner eye. But an icon is meaning as well as spectacle, and there is a logic to the icons of sf that will always recall the reader of these signs to the printed page, and verbal rather than visual argument. (Jones 2003, 173)

Animators had to develop new techniques to express new ideas and to encompass the new experiences the twentieth century brought to most people; physicist Werner Heisenberg notes that scientists in the twentieth century similarly had to develop new mathematical and physical techniques to adequately describe new developments in scientific discovery because of the impossibility of expressing new ideas in old language (Heisenberg 1959, 106, 123). The "logic" described by Gwyneth Jones is that of common-sense expectations frustrated by the

---

[4] 1. The Road Runner cannot harm the Coyote except by going "meep, meep."
2. No outside force can harm the Coyote – only his own ineptitude or the failure of Acme products. Trains and trucks were the exception from time to time.
3. The Coyote could stop anytime – if he were not a fanatic.
4. No dialogue ever, except "meep, meep" and yowling in pain.
5. The Road Runner must stay on the road – for no other reason than that he's a roadrunner.
6. All action must be confined to the natural environment of the two characters – the southwest American desert.
7. All tools, weapons, or mechanical conveniences must be obtained from the Acme Corporation.
8. Whenever possible, make gravity the Coyote's greatest enemy.
9. The Coyote is always more humiliated than harmed by his failures.
10. The audience's sympathy must remain with the Coyote.
11. The Coyote is not allowed to catch or eat the Road Runner. (Jones 1999)

incomprehensible complexities of a changing world, the frustration felt by everyone who has ever been confronted with the intractable refusal of a machine to work as it is supposed to. Her reminder that in cases like this we revert to "verbal rather than visual argument" in order to decipher the icon recalls one of Ursula Le Guin's categories of science fiction tropes, the "literalization of metaphor" (Le Guin and Attebery 1993, 30): when the Coyote fails spectacularly, either the "ground drops out from under him" or he "hits the wall."

4 Gravity and The Observer Effect; or, Schrödinger's Coyote

In cartoons, the normal logic of everyday life is suspended: characters careen into solid objects and pick themselves up without a scratch; the Road Runner can run through the side of a mountain if it has a picture of a tunnel painted on it; Wile E. Coyote sometimes appears to defy the law of gravity (if only temporarily) when he goes over a cliff. Among Chuck Jones's rules for logical consistency in the series is rule 8: "Whenever possible, make gravity the Coyote's greatest enemy" (Jones 1999, Kindle Locations 2344–46). Jones explains: "Tex [Avery], more than any other director, was fascinated by the limitless possible extensions of the medium. He simply ignored all the physical laws of the universe, with, perhaps, an occasional nod to the law of gravity" (Jones 1999, Kindle Locations 1000–1002).[5]

On a closer look, while gravity appears to be the one constant in the Warner Bros. cartoons, even when it works the effects are unpredictable. Avery and Jones may have ignored the laws as they knew them, but developments in twentieth-century theoretical physics seem to corroborate their far-fetched vision. While Wile E. Coyote does sometimes appear to defy gravity in the commonplace world of classic Newtonian physics, gravity works on him as it appears to do on quantum and relativistic levels; the rules are bent but not broken. Sometimes, when the Coyote falls, his trajectory takes the form of a parabolic arc, as we would normally expect.

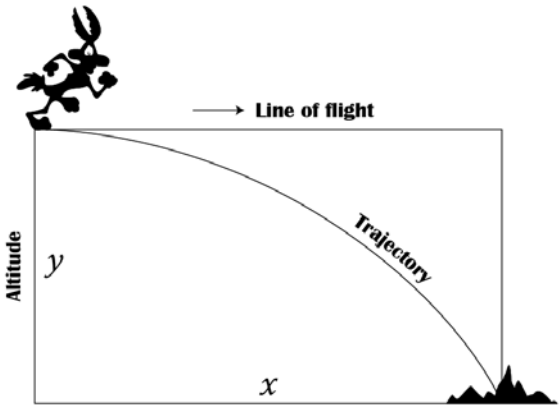

Figure 1. Falling Coyote (Canis ballisticus) obeying Newtonian Rules of Gravity. Illustration by Matic Ačko.[6]

5 Avery was Jones's predecessor as director of Warner Bros. cartoons.

6 His trajectory can be calculated using simplified versions of the equations proposed by Edwin Wilson (1920): Horizontal distance $x = v_x t$; Vertical distance $y = v_{yo} t - \frac{1}{2} g t^2$; Where x is the horizontal component, y is the vertical component, g is gravitational acceleration, v is initial speed, v_x is the horizontal component of the initial speed, and v_{yo} is the initial vertical component of the initial speed.

At other times, after he goes over a cliff, he hangs suspended in mid-air until he realises that he is no longer on solid ground. This turns out to be an illustration of the paradoxical "observer effect": gravity has no effect on him until he becomes aware of it. This is a visual parody of the observer effect which, as explained by Heisenberg, marks a profound change in the way we see the world: "[I]t is in quantum theory that the most fundamental changes with respect to the concept of reality have taken place" (Heisenberg 1959, 33). In certain extreme cases, such as the observation of sub-atomic particles, the very act of observation affects the observed process:

> Of course the introduction of the observer must not be misunderstood to imply that some kind of subjective features are to be brought into the description of nature. The observer has, rather, only the function of registering decisions, i.e., processes in space and time, and *it does not matter whether the observer is an apparatus or a human being*; but the registration, i.e., the transition from the 'possible' to the 'actual,' is absolutely necessary here and cannot be omitted from the interpretation of quantum theory. (121)

At this moment, the shot, in which we see him horizontally, ends, and in the next shot the camera, still at the same level above the ground, is now pointed downwards as we watch him falling away from us to the canyon floor far below. In some cartoons, his fall is accompanied by a realistic whistling sound emulating the familiar Doppler effect, whereby the sound of an object moving away from us has a descending pitch; in others, we hear a symbolic pennywhistle version of the sound (see the Appendix, which lists different variations of the effect of gravity as they appear in Road Runner cartoons).

Several scientific principles are depicted here. First, as the Coyote goes over the edge, he loses traction, and air resistance brings his motion to a halt. Second, gravity takes hold and he falls.[7] Here, however, his behaviour appears to be governed by the Uncertainty Principle: is he falling, or is he not falling? The Coyote is both falling and not falling; he has been quantized. It is only when he is able to observe his situation, to which he was oblivious in his quest to catch the Road Runner, that the laws of physics catch up to him. When he realises that he must fall, his potentiality turns into movement.[8] Suvin attributes this kind of logic to the realm of fantasy: "The stock fairy-tale accessory […] evades the empirical law of physical gravity – as the hero evades social gravity – by imagining its opposite. The wish-fulfilling element is its strength and weakness […] Anything is possible in a fairy tale, because a fairy tale is manifestly impossible" (Suvin 1972, 375). Suvin draws a hard line between science fiction and fantasy: for him, science fiction depicts what is possible, given current knowledge of nature, while fantasy crosses over into the impossible and the supernatural. Other science fiction writers and critics, such as Le

---

7 Under the laws of classic Newtonian physics, gravity would take effect immediately the moment he was no longer on solid ground, and he would be subject to the law as described in the equations

$$F_g = mg,$$
$$å F = ma,$$
$$F_g = ma,$$
$$mg = ma,$$
$$A = g,$$

where F_g is the gravitational force, m is the mass of the object, g is the gravitational acceleration, $\sum F$ stands for the sum of the forces acting on the object and a is the acceleration of the object.

8 The Uncertainty Principle, formulated in 1927, is expressed in the function $\sigma_x \sigma_p \geq \frac{\hbar}{2}$ where σ_x is the standard deviation of position, σ_p is the standard deviation of momentum and $\hbar$ is the reduced Planck constant, $h / (2\pi)$. In quantum theory, radiation, such as light, is emitted, transmitted, and absorbed in discrete energy packets, or quanta, determined by the frequency of the radiation and the value of Planck's constant ($6.62607004 \times 10^{-34}$ joule·second).

Guin, have a less rigid view; our definition of what is "possible" is constantly changing. The Coyote's act of observing gravity has an effect on the location and time of its effect on the object (himself), thus illustrating the principle of infinite regression in physics: "no interpretation of the quantum theory can avoid a measurement problem involving the observer" (Rosenblum and Kuttner 2002, 1273). Charles Seife argues in "Physics Enters the Twilight Zone" that the strange predictions of modern quantum and relativity science predict a "multiverse," where anything and everything is possible (Seife 2004). Trying to come to terms with the apparent logical paradoxes described by twentieth-century scientific discovery gives rise to a feeling of the absurd.

Another strange effect predicted by modern physics appears in some of the cartoons in which, immediately after the Coyote realises that he is about to fall, his body stretches; his feet begin to fall first, and he is momentarily elongated until his head catches up. This is an illustration of the tidal effect, described by physicist Stephen Hawking, when an object becomes subjected to an intense gravitational field, such as that close to a black hole. Nigel Calder dubbed this phenomenon "Spaghettification" (Calder 1979, 143; Hawking 1998).[9]

These strange predictions of modern theories of the physical laws of the universe are similar in both method and intent to the way science fiction transforms the familiar world: "Science fiction uses the techniques of both mimetic representation and also quasi-mimetic but counterfactual deviations from the established ideological world-picture to create a critical distance from it" (Csicsery-Ronay 2015, 31). Ironically, although the cartoonists and animators of the mid-twentieth century may have thought that they were merely lampooning the eccentricities of the "boffins," they anticipated some of the real scientific discoveries of the century. In summary, cartoons and other science fiction parodies illustrate one of the philosophical paradoxes described by eminent twentieth-century theoretical physicist John Wheeler: "no phenomenon is a phenomenon until it is an observed phenomenon" (Wheeler 1978, 14); this, as the Coyote often observes, even includes gravity.

5 Multidimensionality

Many Road Runner cartoons show the Road Runner doing something that seems impossible, such as when he goes through solid matter. The Coyote despairs of catching the faster Road Runner in a race, so he decides to create a trap by painting a tunnel on the side of a mountain. To his surprise, the Road Runner runs straight through the "tunnel"; to his double surprise, the Coyote crashes into the mountainside when he tries to follow, a comic pratfall both surprising and expected.

Wile E. Coyote also crashes when he falls over a cliff. After several long seconds, the falling shot ends, and in the next shot, now at canyon floor ground level, we see a third example of a twentieth-century physics paradox: instead of the splattered remains we would expect in a common-sense Newtonian world, the Coyote has gone through solid matter, leaving a coyote-shaped hole in the ground from which he emerges dazed but otherwise unharmed. The Coyote's penetrating power defies the normal rules of biology, but it does correspond metaphorically to the laws of physics, if his inability to learn from his mistakes is a measure of his density.

[9] In keeping with physics' concept of symmetry, there is a similar symmetry in the effect of gravity on Wile E. Coyote: in some cartoons, gravity stretches him; in others, he is compressed when he falls and hits the ground, or is hit by a falling object; in "Wild about Hurry" (1959) and "To Beep or Not to Beep" (1963) this takes the form of "concertinafication," complete with squeeze-box sound effects.

Viewers have seen these gags so many times that we have come to expect them; the impossible has been normalized. Over time, we have become accustomed to the idea that nothing is impossible. Scientists constructed a similar paradigm shift in the mid-twentieth century. Einstein's Theory of Relativity (1905, 1915) predicted that nothing could escape the force of gravity. The extreme case would be an object passing through the event horizon of a black hole, where gravity is so strong that the escape velocity exceeds the speed of light. Any object or information that fell in could never get out. Stephen Hawking, however, combined relativity with quantum theory to show that it could: in quantum theory, pairs of subatomic particles can appear out of empty space, drawing on the potential energy present throughout all space. A particle and an anti-particle can appear, exist for a very short time, then annihilate each other, thus preserving the matter and energy balance of the universe (Hawking 1975). If, however, such a pair appears near the event horizon of a black hole, one particle might fall through the event horizon while the other moves off in a different direction. Thus, in effect, matter/energy can escape the gravitational pull of a black hole (which, given enough time, could "evaporate"). The Coyote metaphorically emulates this gravity-defying particle when he hits the canyon floor and disappears into a hole in the ground, only to reappear momentarily, dazed but otherwise unharmed, having defied both death and gravity (and, incidentally, enacting mythical cyclical rebirths, like Adonis (see Frye 1957, 158)).

The Road Runner's ability to go through mountains unscathed is similar to the behaviour of another kind of sub-atomic particle. He behaves like an alpha particle in the Geiger-Marsden experiment (also known as the Rutherford Gold Foil Experiment).

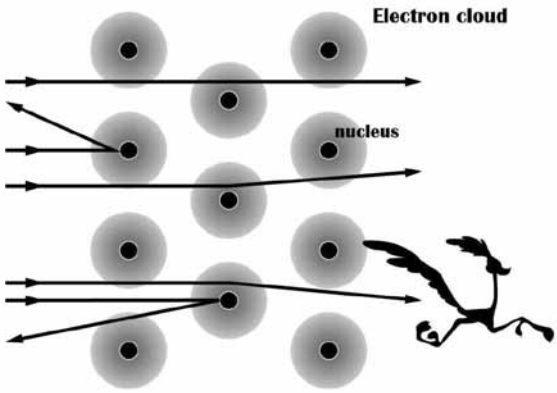

Figure 2. Road Runner (*Avem energeticus*) penetrates solid matter. Illustration by Matic Ačko.

The same principle is one of the central themes of *The Adventures of Buckaroo Banzai Across the Eighth Dimension* (Richter 1984), a live-action film that uses cartoon logic and physics in a parody of older science fiction films.[10] Buckaroo's interdimensional car can go through the side

[10] W.D. Richter and Earl Mac Rauch's 1984 film begins with an experiment in which Buckaroo manages to go through a mountainside in his car, which is equipped with an "oscillation overthruster," analogous to Rutherford's alpha particle beam generator, confirming the Rutherford theory on a macroscopic scale. While in this alternate dimension, however, he finds evidence of life, and deduces that our world has been invaded by Red Lectroids, aliens from another dimension, criminals who had been banished from their own world. Their attempt to return home is opposed by their own people, who threaten to destroy the Earth unless Buckaroo can stop them, which he eventually does. As special effects technologies developed, live-action films borrowed many of the visual images of cartoons. In *Buckaroo Banzai*, the Red Lectroid space pod makes a sound like that of the Jetsons' flying car (Hanna and Barbera 1962–63); there is also a sight gag like Wile E. Coyote's delayed reaction when falling off a cliff, as the pod drops off the bottom edge of the screen only to rise into the frame again

of a mountain, as the Road Runner can and Wile E. Coyote cannot (Buckaroo is an analogue of the Road Runner, and his antagonist, Lord John Whorfin, who steals his oscillation overthruster to try to get back to the 8th dimension, is a version of the Coyote). In the film, Banzai explains at a press conference that he can go through solid matter because the atoms that make up matter are mostly empty space, recalling the model described by the experiments of Rutherford, Geiger and Marsden (Rutherford 1911).[11]

The revolutionary concepts of Relativity and Quantum Physics have forced us to redefine the way we think about the world we live in, but fortunately, we had Wile E. Coyote and the Road Runner to help us get used to the new ideas.

6 Technocracy, Mad Scientists, and Metamorphoses

The common public perception of lapses from "common sense" in the discoveries described by scientists and parodied in films and cartoons are symptoms of a widespread scepticism about technological progress. This phenomenon is not a new one. Jonathan Swift described the same thing in Book IV of *Gulliver's Travels* (1726) with his satire on the "Projectors" (Kiernan 1971). Swift was critical of Newton and the Royal Academy; he believed that Newtonian science was both useless and immoral, since in his view mathematics was "irrelevant to the human predicament" (Treadwell 1975). Pat Rogers asserts that Swift's satire was mainly aimed at engineering projects of his time (Rogers 1975, 261), while other commentators note a political element in his satire on science: "the 'Flying Island' is an image not only of arbitrary, 'high-flying' political power, but also of officially patronized technological lunacy" (Worth 1991, 355).

A few decades after Swift, Samuel Johnson described how disappointment with the promises of contemporary science and technology continued in the mid-eighteenth century:

> When the Philosophers of the last age were first congregated into the Royal Society, great expectations were raised of the sudden progress of useful arts; the time was supposed to be near when engines should turn by a perpetual motion, and health be secured by the universal medicine; when learning should be facilitated by a real character, and commerce extended by ships which could reach their ports in defiance of the tempest.
>
> But improvement is naturally slow. The society met and parted without any visible diminution of the miseries of life. The [gout] and [stone] were still painful, the ground that was not ploughed brought no harvest, and neither oranges nor grapes would grow upon the Hawthorn. At last, those who were disappointed began to be angry; those likewise who hated innovation were glad to gain an opportunity of ridiculing men who had depreciated, perhaps with too much arrogance, the knowledge of antiquity. (Johnson 1759)

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when Buckaroo and Black Lectroid John Parker figure out how to work it (by jump-starting it with a car battery). The Red Lectroids also move in uncanny ways; villain Lord John Whorfin's henchman John Bigbouté side-punches a bystander using the same movement used by Sam Sheepdog in an homage to the 1953 Warner Bros. cartoon "Don't Give Up the Sheep."

[11] Rutherford's team bombarded a sheet of gold foil with alpha particles (helium nuclei), and discovered that 7,999 out of 8,000 particles went through the foil unimpeded, thus demonstrating that what appears to be solid matter is in fact mostly empty space. By measuring the angle of deflection of the remaining particle, the "gold foil" experiment established the size of a gold nucleus with the formula $r_{min} = \frac{1}{4\pi\varepsilon_0}\frac{2q_1q_2}{mv^2} = 270 \text{ fm}$

where r_{min} is the radius of the atom, ε_0 is the dielectric constant in a vacuum, q_1 are q_2 the values of electric charges of the particle being fired and the target particle, m is the mass, and v is the velocity of the particle fired; 1 fm = 10^{-15} meters.

Douglas Lane Patey summarises this theme of Swift's in terms still current in criticism of twentieth-century science:

> We all know what Swift finds wrong with the natural philosophers of Lagado. Gulliver witnesses experiments that serve no practical human use, or that would do harm by inverting the uses of nature (breeding sheep without wool); in seeking to reverse the order of nature (extracting sunshine from cucumbers, returning excrement to its original food), Lagadan projects are utopian – the external equivalent, we might say, of the failure to know one's self. (Patey 1991, 817)

While Swift and Johnson criticized The Royal Society in the context of satires mainly focused on politics, economics and morality, later movements in literature brought an examination of scientific ideas into other realms of popular fiction: "literary naturalism was a remarkably important step along the road to the Golden Age [of science fiction]. Strongly influenced by post-Darwinian developments in the biological sciences and intrigued by emergent theories of human nature in the late nineteenth century, the literary naturalists were central figures in the merging of scientific thought and fictional narrative" (Link and Canavan 2015, 8).

Like science fiction in prose and film, in addition to illustrating some of the paradoxes explored by twentieth-century physics, animated cartoons also explore one of the cultural dimensions of modern society, the simultaneous attraction to and fear of technocracy. The Coyote's addiction to Acme products results in his becoming an archetypal mad scientist seeking "technocratic" solutions to his problems.[12] After World War II, cartoon aliens, Martians, mad scientists, out-of-control robots and malfunctioning, Rube Goldbergian machines were "tropes for […] Cold War anxieties" (Telotte 2017, 116), as the same images in pre-war political and animated cartoons were for Depression-era anxieties.

Nigel Calder explains this dual perception of scientists by the general public; on the one hand, "physics made a noise in the world. But the abiding reason for its special status was that it posed the deepest question to nature" (Calder 1979, 14). While for many people, these are important activities, to others they can seem esoteric and disconnected from reality, so that "The public nevertheless formed illusions about the physicists. There are two versions of the scientist in popular culture: the mad one and the saintly one" (99–100).[13] Both of these visions reflect a widening gap between scientific knowledge and popular understanding, and a fear and distrust of the specialisation and esoteric expertise that appear to be rapidly supplanting traditional knowledge, traditions and institutions. "Unappreciative of the passion for understanding which drove them in their work more compellingly than any taskmaster, outsiders substituted the image of the mad scientist, impelled by a lust for power over nature and man" (14).

This image of the mad scientist, the descendant of Swift's "Projectors," is repeated and confirmed in countless stories, novels, films and cartoons. The modern archetype is Colin Clive's portrayal of Dr. Frankenstein in James Whale's 1933 film (Whale 1931), masterfully parodied by Gene

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[12] In this respect he resembles Mr. Toad in *The Wind in the Willows,* who refuses to accept the arguments of his friends who try to persuade him to give up his addiction to motorcars: "I faithfully promise that the very first motor-car I see, poop-poop! Off I go in it!" (Grahame 1913, 149).

[13] Constance Clark notes that one of the models for the visual portion of the modern stereotype of the scientist comes from a famous photograph of the bearded Charles Darwin: "Darwin's iconic image quickly came to stand as shorthand for evolution in late nineteenth-century cartoons" (Clark 2009, 573). In the twentieth century, photographs of the elderly Einstein with his streaming white hair became a symbol of the saintly scientist.

Wilder in Mel Brooks' *Young Frankenstein* (Brooks 1974). An important aspect of the mad scientist trope is his foreignness, not only figuratively in his unswerving devotion to his goal, but literally in his place of origin. Although Wile E. Coyote is silent,[14] his spiritual cartoon successor, Dexter, "speaks with a Russian accent. Dexter considers himself a very serious scientist, and all well-known scientists have accents" (Adams 2001).[15] Christine Cavanaugh, the voice of Dexter in the cartoons (Tartakovsky 1996–2003), explains that his accent and manner are conscious affectations meant to invoke the stereotype; Dexter, it seems, is playing the role of mad scientist: he has "an affectation, some kind of accent, we're not quite sure. A small Peter Lorre, but not. Perhaps he's Latino, perhaps he's French. He's a scientist; he knows he needs some kind of accent" (Moore 1996). Scientists, in pop culture, are modelled on strange geniuses, foreign in many ways, such as Einstein, Edward Teller, Leo Szilard, Werner von Braun, and their fictional counterparts, Prospero, Victor Frankenstein, Doctor Strangelove (modelled on von Braun) (Starr 2012, 100).[16] These prominent scientists had European accents, since many of them, including Einstein, Teller and Von Braun, came to the United States, either fleeing the Nazi regime or liberated from it.

Mad scientists look, as well as sound, foreign. Animators, borrowing the visual symbolism of films, drew their mad scientists with several iconic features: white lab coats, beards, goatees, hunched backs, dark, staring eyes, all of them denoting madness. Overall, these stereotypical depictions are symbolic of a deep-seated existential anxiety about threats from transformation and change.[17]

The Adventures of Buckaroo Banzai uses these same conventions, as do the *Dexter* and Warner Bros. cartoons, as well as countless other science fiction film villains, in their portrayal of the mad scientist. The villainous Dr. Emilio Lizardo has a mad scientist foreign accent and a scuttling walk like a cartoon character. Lizardo is a hybrid or composite character, like The Fly (Langelaan 1957, Neumann 1958, Cronenberg 1986); he was caught between two dimensions and is an amalgam of the human scientist Lizardo (who was based on Hungarian scientist Leo Szilard) and the reptilian Red Lectroid Lord John Whorfin.[18] He has an Italian accent, while the other Red Lectroids (villainous aliens) have American accents and the Black Lectroids (good aliens) have Jamaican accents. John Lithgow, who played Whorfin/Lizardo

> was not sure about the character, but Richter convinced him by 'claiming what a real feast for an actor this wonderful Jekyll and Hyde character was,' the actor said. Lithgow told an interviewer, 'I have had roles where I came very close to going over the top. […] But this role is completely over the top. It makes the role in *Twilight Zone* seem like a model of restraint. I do it in a wild, red fright wig and rotten false teeth with a thick Italian accent. It's wild.' For Lizardo's accent, Lithgow spent time with an Italian tailor at MGM and

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14 The Coyote is mute in the Road Runner cartoons, although he often communicates by holding up a sign, and he can read. When he appears in cartoons with Bugs Bunny, such as "Operation Rabbit" (1952), he speaks in a posh English accent, voiced by Mel Blanc.

15 Dexter's creator, Genndy Tartakovsky, explains the influence of Warner Brothers' cartoons on his own: "they were made for adults and were shown before theatrical movies. They were still cartoons, so they had to be childlike, to a degree: slapsticky, Three Stooges, physical humor. A good cartoon is always good on two or three levels: surface physical comedy, some intellectual stuff – like Warner Brothers cartoons' pop-culture jokes, gas-rationing jokes during the war – and then the overall character appeal" (Adams 2001).

16 Part of the late astronomer and cosmologist Stephen Hawking's popularity was based on his disability, wheelchair and artificial voice, which gave him an otherworldly appeal.

17 A real-life example of a "mad scientist" from the era of the Warner Brothers cartoons appears in a *Time* magazine article about Russian scientist Vladimir Demnikhov, who transplanted a puppy's head onto an adult dog; the resulting hybrid lived for 38 days (1955).

18 Like Doctor Jekyll and Mr. Hyde, The Fly, and countless other cartoon, comic and movie characters, he has been given a split personality by his own botched experiment, thus embodying the dual nature of the scientist described by Calder.

> recorded his voice […] Lithgow said of his character, 'playing Lizardo felt like playing the madman in *The Cabinet of Dr. Caligari*.' (Editors)

In addition to the accent, Lithgow worked on conveying an aura of alienness with his movements: he changed his walk to that of an "old crab, and because my alien metabolism is supposed to be messed up." Lizardo's henchmen, the Red Lectroids, similarly use unusual movements, like cartoon characters, such as John Bigboute's sideways punch, to denote their alienness, even when disguised as humans.[19]

More than just the scientist's appearance, their pattern of behaviour also fixes them as "mad."[20] As Calder notes, it is the fixation on the goal that many people are unable to identify with: Wile E. Coyote's increasingly desperate and futile attempts to catch the Road Runner with Acme gizmos, Lizardo's attempts to steal Banzai's Oscillation Overthruster (which he needs in order for his ship to cross dimensions), Marvin the Martian's Illudium pu-36 Explosive Space Modulator, with which he plans to destroy the Earth.[21] In each case, the character's fixation on their immediate goal blinds him or her to the big picture and ends in defeat.

The origins and development of the mad scientist stereotype in the popular culture of the early twentieth century can be traced from Rube Goldberg, through Boob McNutt and Professor Lucifer Gorgonzola Butts, to the anthropomorphic Coyote who carries business cards introducing himself as "Wile E. Coyote, Super Genius." The devices he is able to buy from the Acme Company seem to support that boast, as they demonstrate his fascination with mechanical engineering; however, "for all of his failed plots at capturing the Road Runner, his Rube Goldberg devices that work only when they want to, or his inability to reckon with such basic laws of nature as gravity, the Coyote is not really "a dunce," just "more often unlucky than stupid" (Telotte 2017, 118). In the cartoons, the initial goal of catching the Road Runner becomes less important for both the Coyote and the audience than the next absurd scheme he hatches with the help of mail-order contraptions from the Acme Corporation.[22] In this he becomes a metaphoric representative of a post-war society that devoutly believes in technological advance as a solution to all its problems, even those caused by technology. This fixation on immediate, rather than long-term, goals can be seen as the cause of many of the problems that plague our modern industrial society. The headlong rush to develop new technological fixes is widely perceived as ultimately short-sighted and destructive, and the theme of an entire genre of works based on the *Frankenstein* (Shelley 1818) story.

North American viewers in the 1950s saw a series of mock-informative broadcasts that parody mid-twentieth-century educational films:

> Farm of Tomorrow relies almost entirely on such strange juxtapositions, as it catalogues the sort of hybrid wonders that the new "science" of farm cross-breeding will bring,

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19 These symbolic movements are similar to another kind of symbolic shorthand, the postures in stereotypical illustrations of evolution: "The iconographic motifs denoting evolution – especially primates, 'cavemen,' and the linear evolutionary sequence, have become fixed in a cartoon lexicon. The jokes work because viewers recognize the pattern" (Clark 2009, 572).

20 Mad scientists can be female too, like Sarah Polley's character Elsa Kast, a modern-day Dr. Frankenstein in Vincenzo Natali's *Splice* (Natali 2009).

21 Marvin is also an Acme customer, with a similar level of customer satisfaction.

22 Acme (meaning "apex" or "pinnacle") is an analogue for the Sears Corporation, whose mail-order catalogue allowed residents in remote locations across the continent (including Canada) to purchase a multitude of items for delivery by post. Today's equivalent is clearly amazon.com; a recent online search (March 30, 2018) turned up giant magnets, giant slingshots, jet packs and flamethrowers; there are no jet-powered roller skates, but an enterprising coyote could buy electric-powered Rocketskates™. The cartoons never revealed how he paid for all these purchases.

> including an ostrich-chicken to provide larger drumsticks, a kangaroo-cow that will keep its milk in a handy pouch, and a banana-duck whose feathers can be peeled off more easily. […] [A]ll of these films are simply formulaic gag reels, set within a postwar science consciousness, but nonetheless revealing a shift in cultural attitudes. For they all frame their forecast developments not quite as marvels but – especially in the Avery films – as increasingly absurd variations on a theme, as rhetorical pieces in a scheme that, with a hint of Rube Goldberg influence, actually puts the often-heralded accomplishments of science and technology into question. (Telotte 2017, 117–18)

What was considered comical and far-fetched in the 1950s and 60s, however, prefigures the genetic modification and cloning experiments of the 1990s that resulted in such famous creations Dolly the Sheep and a white lab mouse with a human ear growing out of its back (Cao et al. 1997). The absurdity of these creations earns them a place in the tabloids and talk shows, which often distort or ignore the science behind them.

This trope of transformation is, like Swift's example of the Projectors and Dr. Johnson's critique of science in the eighteenth century, a long-established one. Ovid's *Metamorphoses* and Mary Shelley's short story "The Transformation" (Shelley 1831), provide supernatural explanations, while classic novels such as Stephenson's *Strange Case of Dr. Jekyll and Mr. Hyde* (Stevenson 1886) provide a scientific take on the story. The Transformers comics and films use a cartoon meme when the transformers metamorphose. In most science fiction stories and films, it is humans who metamorphose, but in this series, as in 1930s cartoons, it is the machines that change:

> Like the live-action silent comedies that were so popular during the 1910s and 1920s, the cartoon's gag emphasis made great capital from that modernist spirit of "overturning" the status quo, even as it frequently centered those gags around different forms of "transformation". […] (Telotte 2017, 19).

7 Conclusion

In his pursuit of the unattainable, Wile E. has become a modern-day icon, a twentieth-century Don Coyote. His quest to master a force of nature with technology puts him squarely at the centre of an enduring dilemma and debate. It is this theme that, in addition to the production quality and humour of the "Golden Age" cartoons, accounts for his enduring popularity.

As Heisenberg notes, new ideas require new language to describe them, and the animator's art in the early twentieth century was an ideal medium to express new mind- and rule-bending concepts. As relativity and quantum theory challenged long-established perceptions of reality, visual imagery and symbolism were used by scientists such as Einstein, with his thought-experiments (1905, 1915), and Richard Feynman, with his diagrams (1949), to bring about a paradigm shift in the way we describe and understand the world. Popular filmmakers used the same principles to bring these concepts, and debates, to a wide audience: "Cartoons have not always been included in discussions of the visual cultures of science, but they should be: they respond to, and can shape, public understandings of science in important ways" (Clark 2009, 573).

There has always been a duality in popular attitudes towards science and learning, from excitement and admiration for those brave enough to "boldly go where no one has gone before" to fear of unknown realms, such as "in space, no-one can hear you scream." As Clark notes, "public

controversies about science are useful to historians of science. They also add new inflections to the visual language of popular science iconography" (576).

Depictions of currents trends and ideas in science fiction in novels, short stories and film were and are important for bringing these concepts to a wider audience, but in the first half of the twentieth century, science fiction was still less widely consumed than it has become today. Science fiction films such as *The Day the Earth Stood Still* (Wise 1951), *Godzilla* (Honda 1954) and *Attack of the Fifty Foot Woman* (Hertz 1958), were low-budget B-movies, compared to their modern counterparts. The cartoon parodies of science fiction in works by Warner Brothers, Disney, Hanna-Barbera and others helped bring these ideas to the mainstream by making ideas presented in works of more traditional science fiction genres more familiar and less threatening.

While animated cartoons use techniques of parody and satire to elicit laughs from their audiences by poking fun at what many people consider nonsensical, they also have the effect of familiarizing people with new ideas, and as such are used for educational as well as entertainment purposes. In the 1950s, animated cartoons were used to teach science. Visual imagery makes complex concepts easier for visually-literate people to grasp, as in the Bell scientific film series from the 1950s, which included animated segments which functioned "'by weaving together live scenes, fantasy, traceries of diagrams, animated cartoon characters, puppets, and – above all – humorous illustrative parables, metaphors, similes, and analogies, we reduced the complex to the simple, the eternal to the everyday'" (Telotte 2017, 123).[23]

Nowadays, in addition to their widespread use as parodies, cartoons are often used to teach in standard textbooks. "Hip-Hop Physics" (Hayes 2009) uses analogies from cartoons to model and understand physical problems. Modern textbooks use cartoons and animated graphics to teach science concepts; for example, when teaching the effect of air resistance on an object in free fall, Grubelnik et al. found that elementary school students find it easier to understand concepts of math and physics when they use computer graphics to help visualise examples from their experience (Grubelnik et al. 2018).

Thus, Wile E. Coyote went from comic foil to an Everyman of the twentieth century. In trying to adapt himself to a challenging nature with the use of flawed and overhyped technology, his inevitable pratfalls and defeats, tempered with his determination, gave audiences something to both laugh at and admire. His difficulty with the seemingly arbitrary laws of nature reflects our difficulty in comprehending a world whose rules seem to be changing around us, while at the same time his determination to succeed by repeating the tactics that have always failed him give an educational, as well as an entertaining, dimension.

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[23] A series of eight films, the first four directed by Frank Capra, *Our Mr. Sun* (1956), *Hemo the Magnificent* (1957), *The Strange Case of the Cosmic Rays* (1957), *The Unchained Goddess* (1958) and the second four by Owen Crump, *Gateways to the Mind* (1958), *The Alphabet Conspiracy* (1959), *The Thread of Life* (1960) and *About Time* (1962).

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Appendix A – Chronological Use of Effects in a Selection of Road Runner Cartoons[24]

Jones, Chuck, dir. 1949. "Fast and Furry-ous." U.S.A.: Warner Bros. Pictures.

First Wile E. Coyote cartoon; painted tunnel on mountainside.

—, dir. 1952. "Operation Rabbit" (with Bugs Bunny). U.S.A.: Warner Bros. Pictures.

First use of "Wile E. Coyote, Genius."

—, dir. 1952. "Going! Going! Gosh!" U.S.A.: Warner Bros. Pictures.

Bows and arrows; catapults; glue; grease; rockets; hand grenades; painted picture trap in front of chasm → Gravity Observer effect; Acme Street Cleaner's Wagon + 500lb anvil + Excelsior Electric Fan + weather balloon.

[24] This selection includes cartoons produced at the Warner Bros. Cartoons Inc. studios, which closed in 1963.

—, dir. 1953. “Zipping Along.” U.S.A.: Warner Bros. Pictures.

Hand grenade; Acme Giant Kite Kit + bomb; Acme Bird Seed + Ace Steel Shot + giant magnet; Standard Gravity (parabolic arc); spaghettification; Acme Nitroglycerin.

—, dir. 1953. “Don’t Give Up the Sheep” (featuring Ralph Wolf and Sam Sheepdog). U.S.A.: Warner Bros. Pictures.

Sam gives Ralph the same sideways punch that John Bigbouté gives the hunter in *Buckaroo Banzai*. Ralph is a coyote in wolf’s clothing.

—, dir. 1954 “Stop! Look! And Hasten!” U.S.A.: Warner Bros. Pictures.

Acme Bird Seed; Acme Leg Muscle Vitamins.

—, dir. 1955. “Guided Muscle.” U.S.A.: Warner Bros. Pictures.

Bow and arrow; slingshot; cannon; TNT; Acme Grease; home-made tar-and-feather machine.

—, dir. 1955. “Ready, Set, Zoom!” U.S.A.: Warner Bros. Pictures.

Acme Glue + dynamite + standard gravity (parabolic arc); second time–parabolic arc; catapults; dynamite; Acme Outboard Motor + Jim-dandy Wagon + washtub + roller skates = Gravity Observer Effect (Coyote only falls when he realises he is in thin air) + spaghettification); rocket; Acme Female Roadrunner Costume.

—, dir. 1956. “There They Go-Go-Go!” U.S.A.: Warner Bros. Pictures.

Gravity Observer Effect 3x; dynamite; rocket.

—, dir. 1956. “Gee Whiz-z-z-z-z-z-z.” U.S.A.: Warner Bros. Pictures.

Acme Triple-Strength Battleship Steel Plate Armor – the Road Runner goes right through it (and the Coyote too); Acme Bat-Man Outfit; Acme Giant Rubber Band. Coyote goes through the ground. And through a mountainside. Reversal of the sight gag where the Road Runner goes through painted mountainside and the Coyote can’t. In this one, the Road Runner goes through the painted barrier in “real” life, and the Coyote follows into the fictional painted scene and over the painted cliff edge; Acme handlebars + Acme jet motor → Gravity Observer Effect.

—, dir. 1957. “Zoom and Bored.” U.S.A.: Warner Bros. Pictures.

Gravity Observer Effect 2x; electric road drill; dynamite; Acme Bumble Bees; falling anvil; catapult; Ahab Harpoon Gun

—, dir. 1957. “Scrambled Aches.” U.S.A.: Warner Bros. Pictures.

Coyote falls over cliff, climbs out of hole at the bottom 2x + spaghettification + Acme Dehydrated Boulders.

—, dir. 1958. “Hook, Line and Stinker.” U.S.A.: Warner Bros. Pictures.

Dynamite; Acme Bird Seed; Rube Goldberg machine.

—, dir. 1958. “Hip-Hip-Hurry!” U.S.A.: Warner Bros. Pictures.

Hand grenades; dynamite; speedboat; Acme Mouse Snare + Acme Hi-speed Tonic (contains vitamins R, P & M).

—, dir. 1958. "Whoa, Be-Gone!" U.S.A.: Warner Bros. Pictures.

Gravity Observer Effect and spaghettification; Acme giant rubber band; Acme Do-it-yourself Tornado Kit.

—, dir. 1959. "Wild About Hurry." U.S.A.: Warner Bros. Pictures.

Rocket; concertinafication; Acme Giant Rubber Band; invoice from Acme Shopping Center (for rocket sled, track and accessories); Acme Bird Seed + Acme Iron Pellets; magnet + roller skate + hand grenade; Acme Indestructo Steel Ball.

—, dir. 1960. "Hopalong Casualty." U.S.A.: Warner Bros. Pictures.

Dynamite; Acme Christmas Packaging Machine; Acme Earthquake Pills; gravity parabolic arc.

—, dir. 1960. "Fastest with the Mostest." U.S.A.: Warner Bros. Pictures.

Standard Gravity: first time the Coyote falls over a cliff and his trajectory is a parabolic arc. Second time: Observer Effect and spaghettification. More spaghettification later. At the end, Wile E. Coyote holds up a sign that reads "I wouldn't mind, except that he defies the law of gravity!" Then, Road Runner holds up a sign that says "Sure – but I never studied law!"

—, dir. 1961. "Lickety-Splat." U.S.A.: Warner Bros. Pictures.

Spaghettification 4x + Gravity Observer Effect; roller skis; bow & arrow; dynamite darts + balloon; boomerang; falling anvil.

—, dir. 1961. "Beep Prepared." U.S.A.: Warner Bros. Pictures.

Gravity Observer Effect; concertinafication; portable hole; Acme Iron Bird Seed + giant magnet; Acme Little Giant Do-it-yourself Rocket Sled Kit.

—, dir. 1961. "Zip 'n' Snort." U.S.A.: Warner Bros. Pictures.

Gravity Observer Effect; Acme Iron Pellets + giant magnet; standard gravity parabolic arc; Acme Axle Grease (Guaranteed Slippery).

—, dir. 1962. "Zoom at the Top." U.S.A.: Warner Bros. Pictures.

Concertinafication; Gravity Observer Effect; Acme Bird Seed; Acme Instant Icicle Maker; Acme Boomerang + Iron Glue.

—, dir. 1963. "To Beep or Not to Beep." U.S.A.: Warner Bros. Pictures.

Gravity Observer Effect; concertinafication (including concertina sound effect); wrecking ball; catapult.

—, dir. 1964. "War and Pieces." U.S.A.: Warner Bros. Pictures.

Hand grenades; electric eye; Acme Invisible Paint; rocket.

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The (Ir)Relevance of Science Fiction to Non-Binary and Genderqueer Readers

ABSTRACT

As an example of Jean Baudrillard's third order of simulacra, contemporary science fiction represents a convenient literary platform for the exploration of our current and future understanding of gender, gender variants and gender fluidity. The genre should, in theory, have the advantage of being able to avoid the limitations posed by cultural conventions and transcend them in new and original ways. In practice, however, literary works of science fiction that are not subject to the dictations of the binary understanding of gender are few and far between, as authors overwhelmingly use the binary gender division as a binding element between the fictional world and that of the reader. The reversal of gender roles, merging of gender traits, androgynous characters and genderless societies nevertheless began to appear in the 1960s and 1970s. This paper briefly examines the history of attempts at transcending the gender binary in science fiction, and explores the possibility of such writing empowering non-binary/genderqueer individuals.

Keywords: gender studies; science fiction; non-binary gender identities; reader response; genderqueer; gender fluidity; gender variants; gendered narrative

(I)relevantnost znanstvene fantastike za nebinarno in kvirovsko bralstvo

POVZETEK

Sodobna znanstvena fantastika, kot primer Baudrillardovega tretjega reda simulakra, predstavlja prikladno literarno podstat za raziskovanje našega trenutnega in bodočega razumevanja spola, spolne raznolikosti ter fluidnosti. V teoriji ima žanr prednost pred ostalimi, saj ni omejen z družbenimi in kulturnimi pričakovanji, temveč jih ima možnost presegati na nove in izvirne načine. V praksi pa se pokaže, da so znanstvenofantastična literarna dela, ki niso podvržena diktatu binarnega razumevanja spola, pravzaprav prej izjema kot pravilo. Avtorji namreč pretežno uporabljajo binarno spolno delitev kot vezni element med literarnim dogajanjem in vsakodnevnimi izkustvi bralstva. Kljub temu se v šestdesetih in sedemdesetih letih preteklega stoletja pričnejo pojavljati dela, ki vključujejo menjavo spolnih vlog, združevanje stereotipno moških in ženskih lastnosti, androgine like in brezspolne družbe. Na kratko si bomo ogledali razvoj sodobnejše znanstvene fantastike v luči preseganja binarne spolne delitve in poskusili oceniti potencial žanra kot medija za opolnomočenje nebinarnega in genderqueer bralstva.

Ključne besede: študije spola; znanstvena fantastika; nebinarne spolne identitete; odziv bralstva; genderqueer; fluidnost spola; raznolikost spolov; ospoljena pripoved

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The (Ir)Relevance of Science Fiction to Non-Binary and Genderqueer Readers

1 An Introduction to Non-Binary and Genderqueer Readership

1.1 Outside the Gender Binary

The terms non-binary and genderqueer[1] are quickly making their way into both public and private spheres, but there is still much confusion associated with them. The most straightforward, if somewhat simplistic, definition of a non-binary readership would be readers who identify as being outside the gender binary, who transcend the boundaries of the polarised gender dichotomy and therefore identify as neither male nor female. The two expressions, however, serve as umbrella terms for a myriad of gender(less) identities. And it is identities, rather than physical characteristics, that being a genderqueer or a non-binary person revolves around, at the same time not excluding trans[2] or intersex individuals, who may also, though not necessarily, see themselves as being outside the gender binary. According to Richards, Bouman and Barker (2017, 5), "there are non-binary people who identify as a single fixed gender position other than male or female. There are those who have a fluid gender. There are those who have no gender. And there are those who disagree with the very idea of gender."

The fact that non-binary gender identities elude categorisation and refuse to exist within the (never adequately justified, yet nevertheless prevalent) polarised dichotomy of male and female might convey the impression that non-binary genders are some new-fangled gimmick or fad that is unlikely to last. In their introduction to *Genderqueer and Non-Binary Genders,* however, Richards, Bouman and Barker (2017, 2) claim that "it would be foolish to assume that non-binary gender is a purely modern phenomenon". This is supported by examples provided by Vincent and Manzano in the same volume, as they present some instances of non-binary "understandings of gender across time and place" (2017, 11) and gender identities that were "positioned as 'other' from men and women, but were not necessarily being marginalised" (2017, 11). With regard to the European continent, their writing covers "multi-contextual examples of eunuchs" (2017, 11), the eighteenth-century English *mollies*, Albanian sworn virgins and the Italian *femminielli.* Asian representatives include the Indian *hijra*, the Thai *kathoey*, the Indonesian *waria* and three non-binary gender categories (out of a total of five) of the Buginese people of Sulawesi. The

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1 The two expressions are very similar in scope, but may carry different connotations. *Non-binary* tends to simply refer to all genders (or lack thereof) that fall outside the gender binary, while the focus of *genderqueer* is more likely to be on the non-normative aspect of the identity and frequently brings with it specific political preferences and affiliations. Consequently I have chosen to primarily use the term *non-binary* throughout this paper in order to be as inclusive as possible.

2 *Trans* is a problematic term, in that it is applied differently within different communities and research fields. In the humanities, for example, there is a tendency to treat trans as a fluid subject, whereas the natural sciences frequently view it as a stable one, operating within the gender binary (e.g. gender-reassignment surgeries that require one to showcase their conformity to the said binary). "*Transgender* as a term allowed for a range of choices of how an individual pursued and perceived their own gender identity which may or (importantly) may *not* include medicalised processes" (Stewart 2017, 63), revealing the transgressive potential of transgender individuals. Yet *non-binary*, while mostly including *trans*, also challenges its frequent embracing of gender polarisation and cisgender identities and therefore appears to be a much more appropriate umbrella term for identities across and beyond the gender spectrum.

United States and Canada are represented by several different "two-spirit" identities of Native Americans[3] and the First Nations, with South American *machi* completing the overview. While one could argue that the list simply focuses on exceptions to the (binary) rule, Vincent and Manzano nevertheless succeed in presenting an array of geographically and temporally varied examples that do renounce the idea of the gender binary as a self-evident, rigid constant, and expose it as "a relatively recent, Western idea" (2017, 26) that is only one in a long line of possible understandings, social constructions and articulations of gender identities.

Non-binary readers may also appear to some to be an obscure minority, yet figures speak of an ever increasing number of people who do not necessarily identify or even come out as non-binary, but who, in one way or another, feel dissatisfied with and oppressed by the gender binary. Joel et al. (2013) report that their study[4] on gender identity in (what they call) 'normative' individuals revealed that of "the Men (n = 570) and Women (n = 1585) that participated in the study, over 35% felt to some extent as the 'other' gender, as both men and women and/or as neither" (Joel et al. 2013, 1). The researchers consequently conclude that their "results show that the current view of gender identity as binary and unitary does not reflect the gender experience of many 'normative' individuals" (Joel et al. 2013, 25). If we were to add the growing number of people who already identify as non-binary or genderqueer, the percentage of the general population that cannot entirely locate themselves within the gender binary would likely be even higher.

To better explain the kinds of problems and oppression faced by non-binary identified individuals, Bergman (2017, 41) uses British philosopher Miranda Fricker's (2007) concepts of *testimonial* and *hermeneutical injustice*. Both are inexorably linked to knowledge, comprehension, awareness and language in particular, making them relevant to studies of non-binary identities in literature too. *Testimonial justice* is "the occasion upon which prejudice causes a person to be perceived as a less credible or non-credible in their capacity as an informant", while *hermeneutical* injustice signifies a situation in which "a person has no way to describe their experience because the conceptual frame doesn't exist yet due to their stigmatised or disempowered identity" (Fricker 2007 as qtd. in Bergman and Barker 2017, 41).

I believe literary works in general, and science fiction in particular, carry the potential to address both types of injustice described above. By introducing non-binary characters whose wishes regarding gender identification are clearly respected, literature could lead by example and validate non-binary identities, while at the same time creating the aforementioned conceptual frame by developing linguistic solutions with which to describe the non-binary world. The advantage of science fiction (and fantasy), in comparison to many other genres, is that it does not need to take cultural conventions and limitations into account when exploring alternative societal structures, orders or hierarchies. In fact, it has the privilege of being able to study worlds in which the authors are free to perform thought experiments and introduce new societal norms. With its long history of both utopian and dystopian futures and landscapes, science fiction should be the ideal literary platform for exploring non-binary world. And could these worlds not be non-binary utopias as imagined by their non-binary readers? Could science fiction, in fact, not serve as *the* medium through which to "normalise" the concept of gender variance?

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[3] A particularly significant example is that of the North American Zuni tribe, which, according to Vincent and Manzano (and supported by Roscoe (1993 and 1998)), "did not position an immediate view of physiology as the primary indicator of gender. Ritual interventions during pregnancy and after the birth were understood as essential for the development of gender" (2017, 23).

[4] Conducted in Israel.

1.2 Science as Fiction, Fiction as Science

In the age of so-called "alternative facts" and manipulation of empirical (and other types of) data on an unprecedented scale, science has ceased to be seen as objective and indisputable by the general public. J. F. Lyotard (2010) already presented his objections to the idea of absolute scientific truth several decades prior, claiming that science, too, can be influenced by myths and legends, ideologies, religion, pre-existent notions, beliefs, stereotypes, cultural conventions and other similar factors. Our understanding of the world is primarily based on culturally negotiated narratives that are seen as the norm and are rarely questioned. The poststructuralist view is that science is merely one of many possible narratives, an interpretation shared by Donna Harraway, who writes about how "[s]cientific practice is above all a story-telling practice in the sense of historically specific practices of interpretation and testimony" (1989, 4). Michel Foucault (1994) in his work *The Order of Things*, first published in 1966, also famously maintained that no such thing as a universal or objective truth ever existed, but that specific subjective experiences progressed into cultural norms and became what was then termed "natural" and "normal".

Stewart illustrates this with the example of homosexuality, which "has been deemed 'objectively' as a crime, a sickness, and an acceptable identity at different points in time" (Stewart 2017, 59), proving that cultural norms and assumptions can certainly have a profound influence on 'objective' scientific research. This is particularly true in relation to sensitive topics such as sexual identity and sexuality, which are even more likely to be affected by prejudice, stereotypes, norms, personal preferences and expectations.

As can be seen from Vincent and Manzano's (2017, 11–30) examples, "cultural context determines whether gender variation is seen as a 'disorder' needing treatment or an understood and tolerated variation" (Newman 2002, 355). Western societies do appear to be supportive of the idea of "being oneself", frequently even marketing authenticity and originality as desired traits, yet living one's life outside normative paradigms still exposes one to questioning of the legitimacy of one's identity, mocking, scorn and even violence. That is why literature, as an active contributor to societal and cultural context(s), can play an important role in legitimising non-binary identities and potentially kickstarting the process of acknowledging a different, much more varied and fluid framework within which gender can be discussed.

1.3 The Non-Binary Reader

In their 1976 paper entitled "Living with Television," George Gerbner and Larry Gross speak of lack of representation as *symbolic annihilation*. "Representation in the fictional world signifies social existence; absence means symbolic annihilation" (2005, 134), they write. In an article for the *Huffington Post* last year, sociologist Michael Morgan was also quoted as saying: "When you don't see people like yourself, the message is: You're invisible. The message is: You don't count. And the message is: 'There's something wrong with me"' (see Boboltz 2017). Although both these quotations specifically address lack of representation in television programmes, they could easily be applied to literary works as well.

According to Monika Fludernik (in Koron 2008, 58), gender within the narrative is constructed in both implicit and explicit ways – explicitly through the use of language, descriptions of physical appearance and behaviour, and implicitly through accepted cultural conventions. Virtually every element of a literary work may be seen as gendered in one way or another, from the speaker and characters to the plot, setting, genre and the narrative itself. Consequently the

introduction of non-binary identities into literature is perhaps as difficult as their induction into Western society, because readers are conditioned from an early age (through, for example, fairy tales) to assign socially constructed gender roles to characters and consequently internalize them. Even though non-binary identities are not a fictitious literary construct, a society in which "non-binary genders are legitimately acknowledged can seem fictional" (Iantaffi 2017, 291), which is why varied non-binary representation in fiction is of utmost importance for non-binary readers.

The main obstacle to the average reader's understanding of non-binary or gender-neutral characters is generally their own preconceived notions about the gender division(s). There are now more works available for children with gender neutral characters than ever before,[5] but Renzetti and Curran's study (1992, 35) showed that parents, when reading to their children and coming across a gender-neutral character, will frequently present the latter to the child as male or female. In cases when authors take special care not to include any stereotypical defining gender characteristics, parents will mostly interpret the character as male, while female characters are those that implicitly or explicitly exhibit stereotypical female traits. The same applies to science fiction readers who, having grown up with certain patterns of gender-related cultural expectations, are also tempted to read non-binary characters as either male or female. The role of the reader is therefore essential in interpreting and understanding non-normative identities.

One way of addressing this problem may be with the help of science fiction's special relationship with its readership that is not typical of most other genres. A high level of interaction between writers and their audiences had already began in the early days of science fiction in the so-called pulp magazines, which accepted and published letters containing readers' ideas, critiques and suggestions. This was followed by meetings of authors and readers at science fiction conventions in the 1920s and 1930s, and later on by unofficial fanzines that also published alternative storylines written by their readers. This tradition continues today through online contact (blogs, vlogs, forums, specialist websites etc.), which allows authors to be constantly in touch with their readership, and the readers to claim elements of narratives as their own. With the appearance of these immense digital and, most importantly, global, networks, fluid online avatars and online presences, it is also becoming increasingly easier to explain and understand the concept of fluid and non-binary identities.

From this unusual author-reader relationship within the genre stems another feature of science fiction production that is particularly relevant to marginalized and non-normative groups, so-called fan fiction. Readers of science fiction already began to create and publish their own narratives involving pre-existing characters in the 1930s, but the subgenre really exploded with the advent of the Internet in the 1990s. This type of writing enables fans to create parallel literary worlds, simulacra of simulacra of sorts, within which the readership is free to implement any changes they would have liked to have seen in the original work. Sexual orientation and gender identity appear to be among the more frequently addressed and changed elements, with the *Star Trek*-inspired Kirk/Spock stories of the 1970s also providing the name for a specific subgenre of fan fiction called slash fiction (due to the slash symbol between the two names). Slash fiction predominantly deals with erotic or sexual encounters between characters, usually of a homosexual nature, and represents a widespread form of fan fiction that is no longer only limited to science fiction but may include elements from other genres and literary works, frequently even combining them in the form of what is known as crossover writing.

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[5] See e.g. Anne Dewdney's *Llama Llama Red Pajama* (2004), Robert Heidbrede's *I Wished for a Unicorn* (2000) or Lisa McCourt's *I Love You, Stinky Face* (1997).

It was also the readers and their interests that led to the establishment of the James Tiptree Jr. Award for science fiction, dedicated to widening and exploring the notion of gender, as well as the Lambda Award for literary works focused on LGBTQ themes. Both awards have led to the publication of numerous LGBT- and feminist-oriented collections of science fiction works.[6] There is, then, no lack of useful gender-related precedents within science fiction that the non-binary community could appropriate and make their own in the process of legitimising their gender identities.

1.4 The Role of Language

English, like most Indo-European languages,[7] is inherently gendered in accordance with a binary understanding of gender, and implicitly reflects the limitations of this. Language plays a vital role in how those who do not fit the norm, be it a gender one or any other, are perceived within the cultural imagination. Much like with gay individuals (see Kuhar 2003), the discourse on gender identity has also gone through various stages and contexts, among which the medical and legal ones play a particularly prominent role (Bergman and Barker 2017, 41). A consequence of this is that most expressions available to non-binary identified individuals for themselves and each other come from sources that use cold, neutral, scientific terms that push the individual into the role of the Other, one who is to be studied for their peculiarity. "We have no playful language, no admiring language, no nuanced language, and no affirming language," write Bergman and Barker (2017, 41).

They also jokingly add that there "is no trans equivalent of the *Academie Français*" (2017, 42) and the use of terminology that falls under the trans, non-binary and genderqueer umbrellas is consequently complicated, inconsistent and sometimes even contradictory. It is therefore essential that language evolves simultaneously with our ever-broader understanding of gender, and science fiction (and literature in general) could certainly help popularize terminology related to the various distinctions of gender identity, however subtle the differences between them may be.

Science fiction is also often hailed as a genre of innovation, and is well known for its introduction of countless neologisms that often pass into public use. From *robot* in Čapek's *RUR*, Asimov's *robotics* in "Liar", Williamson's *genetic engineering* and *ion drive* (in *Dragon's Island* and *Equalizer*, respectively) to the more recent *computer virus* in Gerrold's "When Harlie Was One" and Gibson's *cyberspace* in *Neuromancer*, science fiction has perhaps contributed to the world of science and technology in linguistic terms much more than any other. From the 1960s on, with the advent of feminist science fiction and the entry of so-called "soft sciences"[8] into the genre, exploring

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6 See e.g. *Daughters of Earth: Feminist Science Fiction in the Twentieth Century* (ed. Justine Larbalestier), *Sisters of the Revolution: A Feminist Speculative Fiction Anthology* (ed. Ann in Jeff Vandermeer), *Worlds Apart: An Anthology of Lesbian and Gay Science Fiction and Fantasy* (ed. C. Decarnin, E. Garber, L. Paleo), *Kindred Spirits: An Anthology of Gay and Lesbian Science Fiction Stories* (ed. J. M. Elliot), *Daring to Dream: Utopian Fiction by United States Women Before 1950* (ed. C.F. Kessler), *Space of Her Own: Twenty Outstanding Science Fiction Stories by Women Writers* (ed. S. McCarthy), *Flying Cups and Saucers: Gender Explorations in Science Fiction and Fantasy* (ed. D. Notkin) etc.

7 Slavic languages, for example, in which most parts of speech (nouns, pronouns, verbs and adjectives in particular) are gendered, do recognize a neuter gender in addition to masculine and feminine, yet it is almost never applied to living beings (an exception in Slovenian being *dekle*) or is done so in a derogatory sense (e.g. the use of Slovenian pronoun "ono" to refer to a transsexual person).

8 Soft and hard science are (in my opinion outdated and utterly inappropriate) expressions used to distinguish (or, rather, create a hierarchy) between more "masculine" and "real" (i.e. hard) sciences, such as technology, engineering, physics, mechanics or chemistry, and more "feminine" and "not properly scientific" or "exact" (i.e. soft) social sciences

societal issues and performing related thought experiments have become legitimate parts of such writing, and neologisms concerning social sciences should thus be an integral part of that process. We know that science fiction is certainly capable of introducing and popularising new terminology and has, in fact, on certain occasions already contributed to non-binary vocabulary, particularly through the introduction of non-binary pronouns.

Kate Bornstein, in their seminal work *Gender Outlaw* (1994), makes a strong case for the introduction of gender non-specific pronouns, and while this was almost unimaginable at the time of publication, much has changed in the past twenty-five years. Due to their increased usage, particularly online, some non-gender specific pronouns, the honorific Mx., singular use of *they* and the word *cisgender* have already made their way into the *Oxford English Dictionary*. Science fiction, on the other hand, has provided us with many more options to consider. Some of the more recent examples include the use of *ðe* by Melissa Scott in *Shadow Man* (1995), *hir* and *hirs* by Nancy Kress in "My Mother, Dancing" (2000), *ze* in Seth Dickson's "Sekhmet Hunts the Dying Gnosis: A Computation" (2014) and *ve/ver/vis* in the works of Greg Egan. By continuing to make non-binary pronouns, whatever shape or form they may take, a part of their literary world, science fiction writers can help readers understand existences beyond binaries. However, there are many more as-yet unexplored linguistic possibilities (such as, for example, different registers of gender-neutral communication) for science fiction to consider beyond mere pronouns.

2 Science Fiction as a Platform for Researching Gender Beyond the Binary

Traditional science fiction is rightly seen as a very formulaic genre that caters to the long-standing expectations of its readership, yet is in no way restricted or forced to remain within those boundaries. At first sight it appears to be a genre created by and for men (in the most conventional understanding of the word), therefore focusing on technology and male competence in dealing with it, reducing women to their assistants, damsels-in-distress or mere sexual objects. Yet it is partly due to its seemingly very rigid narrative structures and codes that science fiction is so susceptible to subversion (Roberts 1993, 7), an approach used to question gender hierarchy even in periods when technology-focused hard science fiction reigned supreme, such as in the age of cyberpunk.

The issues of gender and gender division, although often seemingly absent, appear in virtually every work of science fiction, if only through reproduction of the prevailing social norms. When a traditional science fiction author creates their literary world, they generally introduce at least some innovations[9], elements that differ from what the average Earthling is thought to be familiar with. Yet if everything in these literary worlds were, hypothetically, completely new to the reader, they would find it much more difficult to engage with the text, as well as to compare and contrast

such as sociology, psychology or anthropology. The expression soft science fiction can also refer to plotlines with elements that are not scientifically accurate. The science fiction community has a long history of preferring speculative sciences to speculative societies, but with the increase in popularity of the fantasy genre from the 1990s on, "soft" science fiction is also becoming more appreciated and rewarded (see Nnedi Okorafor).

9 Darko Suvin's *cognitive estrangement* is often quoted as the distinguishing characteristic of science fiction, meaning that the genre contains an element or elements that differ from the reality of the reader (called *zero world* by Suvin, the zero referring to the coordinate system or representing the control group in an experiment), but is/are still somehow cognitively linked to the implied reader's reality. The diegetic world of science fiction has to therefore resemble our world, yet also differ from it, presenting its readership with a combination of what Suvin calls the *novum* and familiar contexts along with the applicable laws of science.

the two existences, which is why virtually all science fiction works also tend to include known elements and patterns. It would certainly be unrealistic to expect authors to focus on every single aspect of their newly created world(s) with the same meticulousness, yet suspiciously the gender binary often slips through the cracks and remains largely unaffected compared to our own reality.

Unlike fantasy literature, which is ahistorical in nature and does not necessarily concern itself with plausibility, science fiction often deals with concrete reasons for why and how the differences between the science fiction world and our own came to be. A *novum* in science fiction should, according to Suvin (1979), be scientifically plausible (even when not necessarily scientifically plausible in the implied reader's world) and not a supernatural element, which makes science fiction a genre that offers a significantly more reliable platform for studying potential changes in human development than other types of fiction.

Jean Baudrillard (1994, 121) even claims that contemporary science fiction is an example of third order simulacra, meaning that it no longer stems from external sources but is generated from the simulation of itself. This makes it one of the first simulacrous literary genres, which means it has the potential to explore theoretical and practical foundations for potential cultural and societal developments, such as the introduction of non-binary and fluid genders. The boundaries between the real and simulated have become unclear, the simulation is behaving as reality and reality as simulation. Contemporary science fiction therefore becomes "a co-creator of postmodern realities and a source of ontological versions of emerging worlds" (Šporčič 2016, 45).

Science fiction has long been "the place where visions of the future are explored, especially by those who cannot find room in the context of mainstream, academic knowledge production; and where social activists can envision new worlds" (Iantaffi 2017, 291). It is therefore not unreasonable to expect gender and gender variance to be experimented with and examined within different social contexts, thus representing a building block in the establishment of Suvin's cognitive estrangement. However, even a cursory overview of science fiction anthologies and the most prominent and widely-read science fiction of the last century reveals that while individual works may indeed explicitly address gender by experimenting with various perspectives and presenting the reader with more or less complex extrapolations of the present situation, the majority do not pose any gender-related questions whatsoever, taking the binary division for granted and using it as an anchor, a conveniently familiar element taken from our 'zero world' to make the reader feel more at home.

The fact that authors often approach the existing gender paradigm as logical and even axiomatic does not, however, prevent such literary works from serving as an important source of information in contemporary science fiction, since "one can trace patterns of masculine frustration and fulfilment that still underlie SF's masterplots, though today they may be better disguised or employed ironically" (Attebery 2002, 13). This phenomenon can be understood as a conspicuous sign of just how deeply rooted our binary understanding of gender is, and how difficult it is for authors and readers alike to imagine and comprehend gender outside the established parameters. The question is therefore not really whether science fiction as a genre has the potential to create texts featuring non-binary individuals in empowering roles, but to what degree the authors have realised and made use of this advantage so far.

2.1 Gender in Contemporary Anglo-American Science Fiction

The vast majority of science fiction works prior to the sexual revolution in the 1960s were written, edited, illustrated and read by a male population that did not concern itself with researching,

critiquing or moving boundaries in terms of established understanding of gender.[10] Exceptions to this rule include writers such as Philip K. Dick, who began doubting the legitimacy and logic of the evolutionary model (as portrayed in the stories of superheroes and superhumans) as early as the 1950s. Such literary works may have been in the minority, but the questioning of the supposed essentialism of the "natural opposites", as well as the scrutiny of the key principles on which the gender hierarchy and male superiority were founded, appears to have truly taken off in the early 1960s. At this point we can observe female characters becoming physically and intellectually stronger, although they are still in the service of the male gaze.

The binary perception of gender continues to be as strong as ever, but there is a noticeable unease about the imperatives of biological determinism, manifesting itself in examples of science fiction works in which traits traditionally associated with one (primarily male) gender are applied to the other (primarily female). This exchange of female characteristics for male ones (but virtually never the other way around) led to a new breed of female characters: ones that can rival males in at least certain aspects, even though they continue to exist within the patriarchal realm. Despite numerous shortcomings of this approach, the introduction of the "male woman" (e.g. the character of scientist Susan Calvin in the works of Isaac Asimov), can still be seen as yet another step towards transcending the gender binary. Joanna Russ (1980) refers to such writing as "the battle of the sexes", believing that these narratives expose the fear of female challenges to gender hierarchies (Merrick 2003, 243).

Due to the strengthening of civil rights, feminist, gay and many other movements of individuals whose rights had formerly been neglected, science fiction was also forced to confront societal issues it had previously avoided. It is only in the late 1960s and early 1970s, however, that we can observe a more substantial number of strong feminist science fiction works[11] not afraid of challenging the presumption that the role of gender in science fiction is necessarily self-evident (in that it is simply transferred from the binary-obsessed zero world of its readership). Influenced by pulp writing of the 1930s, the authors would create functional single-gender (predominantly female) only societies.[12] These feminist works are often either utopian or dystopian, but their main mission becomes that of functioning as thought experiments, an approach that also enables science fiction to provide its readership with new ways of decoding and manipulating their understanding of gender. The role of science fiction as a playground for thought experiments is, in fact, the genre's main advantage in exploring non-binary identities and their position within societies.

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[10] Eric Leif Davin (2006), however, identifies at least 203 female authors that published over a thousand stories in British and American science fiction magazines between the years 1926 and 1965, proving that the genre was never entirely in the male domain.

[11] Among the more visible female writers of the 1960s and 1970s we find E. L. Arch, Marion Zimmer Bradley, Rosel George Brown, Octavia E. Butler, Suzy McKee Charnas, C. J. Cherryh, Jo Clayton, Juanita Coulson, Sonya Dorman, Suzette Haden Elgin, Carol Emshwiller, M. J. Engh, Gertrude Friedberg, Phyllis Gotlieb, Diana Wynne Jones, Lee Killough, Tanith Lee, Madeleine L'Engle, Ursula Le Guin, A. M. Lightner, Elizabeth A. Lynn, Anne McCaffrey, Vonda McIntyre, Janet Morris, Doris Piserchia, Marta Randall, Kit Reed, Joanna Russ, Pamela Sargent, Josephine Saxton, Jody Scott, Kathleen Sky, James Tiptree, Lisa Tuttle, Joan D. Vinge, Cherry Wilder, Kate Wilhelm, Chelsea Quinn Yarbro and Pamela Zoline.

[12] Already in 1931, Leslie Francis Stone published *The Conquest of Gola*, in which a matriarchal society is spared an invasion by men because the would-be attackers simply cannot believe the planet is run exclusively by women. Other examples of feminist utopias include McKee Charnas' *Walk to the End of the World* (1974) and *Motherlines* (1978), Joanna Russ' "When It Changed" (1972), James Tiptree Jr.'s "Houston, Houston, Do You Read?" (1976), Joan Slonczewski's *A Door Into Ocean* (1986), and so on.

I believe that feminist science fiction writing significantly contributed to the establishment and development of gender studies, continuing the curious relationship stemming from the birth of first wave feminism and science fiction, both under the influence of the aftermath of the Industrial Revolution in the late 19th century.[13] Science fiction's potential for exploring societal issues is then finally recognized with the advent of second wave feminism in the 1960s, with parallel worlds and societies of the future being created with the intention of exploring the possibility of gender roles not being genetically conditioned, but socially. This new generation of science fiction authors began to create and explore new patterns of social interaction and uncovered new identities on the spectrum between the two binaries, in the process attempting to expose gender division as an artificial construct designed to justify and praise hegemonic masculinity and enforce inequitable gender roles.

I would postulate that it is second wave feminism that should be seen as the defining movement with the aid of which (intentional or unintentional) attempts at transcending biological determinism were joined by premeditated experiments, whose aim was also to transcend the binary gender division. Here the readers are finally faced with works in which characters inhabit genderless worlds or societies with gender divisions that differ from the one familiar to us (e.g. in Ursula Le Guin's *The Left Hand of Darkness*, from 1969). There seems to be an almost ubiquitous awareness of gender roles as a socially constructed phenomenon, a theory that is later supported through theoretical work of many female authors of the period (for instance the collection of essays entitled *The Language of the Night* by Ursula Le Guin from 1979). Sociological and philosophical theories from the 1960s also had a great impact on the treatment of gender in science fiction, and individual literary works even begin to toy with the idea that "equality can only be achieved through elimination of biological differences"[14] (Merrick 2003, 247), an idea defended by Shulamith Firestone (1970) and later taken on board by the postgenderists within the transhumanist movement.

2.2 Androgyny – the Game Changer?

Androgynous characters, which appear in many 1970s science fiction works concerned with gender, no longer represent male or female subjects, but both simultaneously, and can be compared to non-binary characters in that they exist in countless variations. The introduction of hermaphrodite or androgynous characters, be they alien or human, certainly helps transgress the established perceptions, yet these two gender identities, at their very core, nevertheless owe their existence to the binary division and the two-gender truth it propagates, or they would not have been able to be positioned in the middle ground between the two "ideals".

While continuing to acknowledge the male and female extremes at each end of the spectrum, the introduction of a gender continuum (still within the binary) also led towards legitimising identities outside the binary, and prepared the ground for later theories on the fluidity of gender. Androgyny, alongside the multiplication of gender and genderless worlds that all began to appear in science fiction more frequently in the 1970s, therefore played a crucial role in the creation of a new perception that takes on the form of a gender continuum.

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[13] Incidentally, it was also in the late 19th century that gender variance and non-heterosexual proclivities began to be scrutinised by the likes of Von Krafft-Ebing (the author of the influential *Psychopathia Sexualis* from 1886), medicalising the discourse of sexual variations for the century to come.

[14] See e.g. Theodore Sturgeon's *Venus plus X*. (1960).

It is interesting to note that Attebery (2002, 130) sees the popularity of androgyny in 1970s science fiction[15] (as well as pop culture) as being primarily influenced by the assumption that most people have more androgynous characteristics than their social roles allow them to express. Four decades later, the previously mentioned Joel et. al. (2013) come to what is essentially the same conclusion by interviewing gender-normative individuals – a considerable percentage of whom, despite their cisgender self-identification, are willing to admit that they are uncomfortable with being seen as representatives of purely one or the other extreme of the gender binary.

2.3 Written on the Body: Cyberpunk

The next step in our attempt to discern a pattern in the development of gender perception within science fiction is the cyberpunk genre. Emerging in the 1980s, it is notable for its ambiguous nature, having grown out of the postmodernist mindset, yet already flirting with epistemologies that were to replace it. Unlike Shulamith Firestone (1970), who in the late 1960s saw recognition of binaries as a way towards elimination of the same, cyberpunk is accompanied by the return of Cartesianism with the intention of underlining the supremacy and threat of (often hyper-masculinised) technology. Up until this point, science fiction was mostly defined in terms of extrapolation of the known, while cyberpunk introduces a new phase of the genre in which science fiction serves as an example of Baudrillard's third order simulacra.[16] In light of Baudrillard's hyper-functionality and the blurring of boundaries between reality and fiction, it is perhaps not too surprising, albeit none the less worrying, that fetishization of masculinity should have made a comeback, as the 1980s were characterised by growing antifeminist sentiment and repopularisation of sociobiological theories.

On the other hand, this outwardly conservative subgenre of science fiction relies heavily on new forms of embodiment and subjectivity, indicating a possible paradigmatic shift in terms of social (and gender) hierarchies. One of the most notable features of cyberpunk is the significantly increased presence of (previously already existing) cybernetic organisms that combine within them many traditionally opposite notions. Cyborgs are hybrids of biology and technology, of human and inhuman, natural and artificial and, in some cases, also man and woman, should the author so choose. Unlike androids and gynoids, cyborgs are not limited by or to copying humans in terms of looks, thoughts or actions, making their potential for transcending the gender binary all the greater. Limitations, however, appear in the embodiment of the cyborg identity, which often takes on a gendered or even a stereotypically gendered form. The importance of the body is immense, because the normative body in Western societies tends to be one of a white, heterosexual, middle class male. The existence of what is perceived as an ideal (or at least standard) body strongly contributes to our inability to think of individuals as potentially non-binary and intersectional.

The cyborg identity of the subject itself does not, therefore, guarantee any crossing of the gender boundaries and is, in addition, surrounded by a multitude of traditionally male-associated elements within the genre (such as characters, plots, themes, settings, etc.), but the joining of opposites and blurring the boundaries between them certainly make the potential of cyborgs of great interest for future endeavours. In addition, "[o]ne exciting feature of non-binary activism",

[15] See. e.g. Samuel Delaney's "Aye, and Gomorrah..." (1967) and *Triton* (1976), Joanna Russ' *The Female Man* (1970), Marion Zimmer Bradley's *The World Wreckers* (1971) and *Darkover Landfall* (1972), Marge Piercy's *Woman on the Edge of Time* (1976) etc.

[16] For a more detailed treatment of cyberpunk fiction from the perspective of Baudrillard's categories, see Krevel 2012, 55–64.

according to Barker, "is the tendency to challenge and blur other binaries beyond just the gender binary" (2017, 35), which is a phenomenon that can also be observed in cyberpunk literature that promotes hybridity.[17]

2.4 Queer Theory and Gender as Performance

Judith Butler is the most prominent scholar among those who cease to address gender as merely a construct, but also see it as performative. According to Butler (1990, 145), gender ontologically operates within political contexts that define it, which is why repetition of signifiers is essential to subverting gender. Preceding Butler's work are social scientists Kessler and McKenna (1985), who already toyed with the idea of gender as performative in the late 1970s, with West and Zimmerman also exploring the idea of gender as a set of actions in their 1977 (but only published in 1987) article "Doing Gender". Building on their work, Butler claims that we do not possess any essential, timeless characteristics that would justify the gender binary, since gender is simply an illusion kept alive by the dominant power structures. The oft quoted passage from Butler's *Gender Trouble* postulates that "[g]ender is the repeated stylisation of the body, a set of repeated acts within a highly rigid frame that congeal over time to produce the appearance of substance, of a natural sort of being" (Butler 1990, 63). In other words, (normative) genders are forced onto our bodies through the act of repetition.

Butler, alongside the likes of Foucault (1994), Parker and Kosofsky Sedgwick (1995), de Lauretis (1987) and others, played a vital role in the emergence of queer studies and theory in the early 1990s. While this particular field of critical theory does focus on homo- and bisexuality, it also pays attention to previously ignored forms of "transgression", including transgender, intersex and non-binary topics within its analytical framework. According to Warner (in Stewart 2017, 62), rather than defining itself against the heterosexual, queer defines itself against 'the normal'. By embracing and adapting the post-structuralist view of identity as a multifaceted cluster of fluid positions, as opposed to fixed ones, Queer theory established trans and non-binary identities as flag-bearers of gender deconstruction due to their inherent opposition to the prevalent hierarchical binary divisions, codes and practices.

Many science fiction authors of the 1990s were influenced by both queer and performativity theories. Some of them gave up on attempting to transcend the differences between gendered experiences, and instead focused on alternative points of view presented through their work.[18] This approach enabled them to acquaint their readership with brand new or only somewhat different frames of reference and interpretations of a variety of principles, be they marginal or well established. Many science fiction works began to exhibit greater awareness of how the body and embodiment affect social interactions, leading to the introduction of alien races whose (gender and other) hierarchies are more clearly juxtaposed with our own. The works of this period are thus beginning to prepare the ground for non-binary inclusive writing or even already feature characters that could be described as non-binary.

A good example[19] of this is Gwyneth Jones' Aleutian Trilogy (*White Queen*, *North Wind* and *Phoenix Cafe*), in which the author introduces an alien race that is very reminiscent of Earthlings,

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[17] See e.g. Pat Cadigan's *Mindplayers* (1987) and William Gibson's *Neuromancer* (1984).

[18] See e.g. Emma Bull's *Bone Dance* (1991).

[19] Other examples include Ann Leckie's *Ancillary Justice* (2013) and a collection of short stories edited by Brit Mandelo and titled *Beyond the Binary: Genderqueer and Sexually Fluid Speculative Fiction* (2012).

including in terms of gender division. The aliens' gender, however, has no relation to their appearance or reproductive functions, the only piece of information it conveys is one's self-identification. In other words, while gender does exist in the alien society, sex does not. By introducing a different assortment of gendered traits from the ones we traditionally recognize, authors have the opportunity to examine and question our own gender mythology. Some alien civilizations, such as Jones' Aleutians, alternate between male and female gender pronouns much like some non-binary identified individuals choose to, and their perception and understanding of gender is not always in accordance with what humans might term their sex.

3 Conclusion: Science Fiction as a Tool of (Dis?)Empowerment for Non-Binary Individuals

When Iantaffi (2017, 290) attempts to imagine what the world would look like if humanity were to genuinely adopt a systemic and intersectional approach to gender, he answers that "some of the[ir] scenarios seemed so futuristic as to border on science fiction". This is no coincidence. In addition to stereotype-bound mainstream production, science fiction does have a history of offering non-normative identities a haven within which they could develop and be explored. Indeed, a society within which we are not judged on our assigned gender and gender roles, nor our gender identity or expression, is a utopian dream that can currently only be adequately realised and studied as a thought experiment within the realm of science fiction. Since "we are only beginning to understand (again) and to (re)imagine what a world based on gender diversity might look like" (Iantaffi 2017, 293), science fiction is in a unique position to aid the transition from theory to practice.

As we have discovered, however, science fiction throughout the history of the genre only sporadically heads in the direction of attempting to transcend the hierarchical understanding of gender and experimenting with possible alternatives,[20] as the cultural and historical contexts surrounding the texts weigh heavily on them, particularly when it comes to a binary understanding of gender. Each period that produces more than a handful of relatively courageous ventures, which deviate from the established code and introduce worlds that perceive gender differently, seems to be immediately followed by not only a re-emergence of the essentialist approach, but also the return of a strengthened binary division. This phenomenon can be traced back to as early as the first decade of the 20th century, when Roquia Sakhawat Hossain (in "Sultana's Dream", 1905) and Charlotte Perkins Gilman (in "Herland", 1915) in particular raised the stakes with their revolutionary utopian writing. They were later joined by the likes of Clare Winger Harris and Gertrude Barrows Bennet, who told their stories from a female standpoint and were among the first to focus on questions of gender and gender identity. Instead of embracing these "new" approaches, science fiction promptly returned to its hyper-masculinised and sexist roots with the advent of pulp writing, and later the introduction of supermen.

With the counterculture of the 1960s also came a new era for the Western understanding of gender, a period in which a coherent, homogenous humanist subject began to slip away and had to make room for the fluid and limitless postmodern subject. An important legacy of the era, the division between sex and gender, once seen as a victory over essentialism and biological determinism, may now represent a problem, rather than a solution, in terms of legitimising

[20] For a more detailed overview of the history of gender within the genre see Roberts (1993), Attebery (2002), and Šporčič (2016).

the experiences of some non-binary individuals. Not even the androgyny of the 1970s could provide a satisfactory solution to this problem, being varied and fluid within the gender binary, rather than outside it. Cyborgs, as cyberpunk's main contribution in this respect, are also too strongly linked to their Cartesian, patriarchal origin to be truly able to use gender hybridity for ontological development.

Moreover, while both queer and Butler's performativity theories look promising in this regard, they are often extremely difficult to apply to everyday life (or, for that matter, fiction), as they inhabit rather abstract spaces and do not necessarily concern themselves with putting theory into practice (Stewart 2017, 65). Non-binary individuals facing prejudice, inequality and even violence in their daily lives require more than mere awareness of the fact that their bodies and identities may be used as weapons in the fight against gender normativity. In this they do not differ from other gender or sexual orientation minorities, whose activism in the last century has put a lot of emphasis on visibility and representation, primarily because of the important shift in social consciousness that they tend to generate. It is important to show diversity in terms of gender and sexuality in order to resist emerging or already existing stereotypes about non-binary identities as homogeneous.

Just like other forms of media, (science) fiction can also contribute and help non-binary individuals by including a variety of non-binary characters in its narratives. Not only can this prevent non-binary identities from being seen as obscure or even non-existent, but it also provides representations for non-binary people themselves to relate to, potentially leading to affirmation and an increased feeling of self-worth (O'Brien 2017), both of which can be negatively affected by the lack of relatable representations in the surrounding environment. With non-binary activism also strongly favouring an intersectional approach[21] to representation, there is no lack of possibilities when it comes to including non-binary characters in works of fiction. In fact, acknowledging the intersectionality of identities makes it much more difficult to categorize them in theory than it does to feature their (although countless) representations in literary form.

The main issue with the existing science fiction production that deals with questions of gender, be it from the beginning of the 20th century or more recent publications, is that the authors, in most cases, exhibit a tendency to ascribe non-binary gender identities to alien races, automatically pushing them into the inferior category of the Other. "To consider one's body not as on object or thing but as a site or place where meaning is produced" (Stewart 2017, 61) is not easy to do in practice, which is why representation and visibility are of extreme importance. And when they come accompanied by the baggage of playing the Other to the human race, the message to a non-binary readership can only be bitter-sweet, as the non-binary characters in science fiction, despite apparent representation and visibility, are often unable to fully serve as sources of empowerment for anyone wishing to identify with them.

That is why non-binary readers may be forced to, at least initially, follow in the footsteps of female readers of pulp science fiction from the 1930s. The images of scantily clad women on the covers of pulp magazines may well have been created with the male gaze in mind, yet the drawings could still be seen as empowering to women due to their proto-feminist potential. The presence of female monsters, sorceresses, giantesses, alien queens and so on alone, regardless of whether they were portrayed as evil and ultimately defeated in the story, introduced the idea of

[21] See Crenshaw (2018).

"women with male characteristics" (strength, ability to rule, military prowess, etc.). Together with the innocent and (usually intellectually and physically) inferior hero's assistant, the female "monsters" inadvertently offered the readership a much wider spectrum of femininity than previously presented, while continuing to play the role of the Other.

The genre certainly contains an abundance of stereotypical portrayals in terms of gender, and if it is ever to take on what O'Brien (2017) calls the "burden of representation" it is vital that it should portray as wide a spectrum of characters as possible, in terms of not only gender identity, but also race, class, sexual orientation, dis/ability and the like. Intersectionality is perhaps one field in which individual science fiction works, thanks to authors like Octavia Butler or Andrea Hairston, have done a somewhat better job than those in many other genres, media or indeed Hollywood productions, with their whitewashing and portrayal of non-normative individuals almost exclusively as protagonists in sob stories revolving around their supposedly life-defining non-normativity.

Iantaffi (2017, 294) writes how "one of the potential future directions of non-binary gender identities" may be "to truly dismantle cisgenderism; to question the assumed essentialism of masculinity and femininity as natural polarities; to consider our complex, intersectional bodies and lived experiences; and to engage with a different framework of genders altogether", while Stewart (2017, 67) describes non-binary lives as "offering a perspective that is powerful, rich, and exciting; indeed, non-binary people are carving out a pathway of possibilities that are currently relatively unexplored, they/we are the avant-garde of gendered existence which is shifting the landscape of gendered possibilities." Indeed, another literary genre whose tenets so wonderfully overlap with the goals of the non-binary community would certainly be hard to find.

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Iain M. Banks – Human, Posthuman and Beyond Human

ABSTRACT

Iain M. Banks has been at the forefront of the space opera science fiction scene since the publication of the first Culture novel, *Consider Phlebas*, in 1987. Upon Banks' death in 2013, the Culture series became a complete body of work. Whilst some criticism has focused on the social and political implications of the Culture universe, little has engaged with the philosophical concepts that underpin it in relation to the current debate regarding our posthuman future. This paper seeks to show how Banks problematises the relationship between the human and posthuman through an exploration of the representation of the posthuman body. Furthermore, it also seeks to address the implications of current concepts of what it means to be human by exploring the relationship between the posthuman and form of Artificial Intelligence that Banks presents. To illustrate these arguments, three Culture texts will be discussed: *The Player of Games* (1988) *Excession* (1996), and "The State of the Art" (1989).

Keywords: Iain M. Banks; Culture series; science fiction; posthuman; Artificial Intelligence

Iain M. Banks – človeško, postčloveško in onkraj-človeško

POVZETEK

Iain M. Banks je že od izida prvega romana iz serije Culture z naslovom *Consider Phlebas* (1987) eno vodilnih imen znanstvenofantastične vesoljske opere. Po Banksovi smrti l. 2013 je serija del o nezemeljski civilizaciji Culture postala zaokrožena celota. Večina kritiških obravnav se osredotoča na družbene in politične implikacije te družbe, le malo pa se jih ukvarja s filozofskimi koncepti, ki serijo povezujejo z aktualno debato o postčloveški prihodnosti. Z analizo reprezentacij postčloveškega telesa v teh delih želim pokazati, na kakšen način Banks problematizira povezavo med človeškim in postčloveškim. V prispevku se z raziskavo odnosa, ki ga Banks vzpostavi med med postčlovekom in umetno inteligenco, dotaknem tudi pomena sodobnih pogledov na to, kaj je človek. Svoja opažanja utemeljujem na treh besedilih iz serije Culture: *The Player of Games* (1988), *Excession* (1996) in 'The State of the Art' (1989).

Ključne besede: Iain M. Banks; serija Culture; znanstvena fantastika; postčlovek; umetna inteligenca

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Iain M. Banks – Human, Posthuman and Beyond Human

1 Introduction

Donna Haraway's seminal work "A Cyborg Manifesto" (1991 [1984], 149–81) described the cyborg as "a hybrid of machine and organism". Since the scientific advances of the nineteenth century, people have been able to augment their bodies, and every procedure from the insertion of a pacemaker to genetic selection in embryos permanently alters the human body. In most cases, this is designed to improve upon the 'natural' state of the body. Rosi Bradotti suggests that the continued integration of technology into everyday life will result in the development of a symbiotic relationship between humans and technology, which, in turn, will drive the direction of growth for both (2013, 41).

It is easy to see the possibilities of altering the human body through medicine and technology; what is more difficult to perceive is how the relationship between humans and information technology might also create a new vision of the posthuman. Rather than being based on physical augmentation, this vision is predicated on the augmentation of the human mind with computer systems. The current reliance on the internet for finding and sharing information demonstrates a current incarnation of this supplementation. However, as computer programming becomes more complex and user interfaces become subtler, the distinction between user and programme will become less obvious. The current development of Artificial Intelligences (AIs) is constrained by programming limitations, but the complexity of these systems is advancing rapidly. As AIs are developed to replicate human decision-making they may become, over time, able to replicate the human ability to make moral and ethical decisions as well as logical ones.

However, the dystopian potential for this form of posthumanism can be found in William Gibson's *Neuromancer* (1984), where the distinction between machine and human consciousness appears non-existent. The concept of the convergent progress of man and machine implies that whilst humans have created and developed machines, the process of alteration is occurring in both directions. Addressing this issue, Martin Halliwell and Andy Mousley argue that "in a cybernetic age we have become copies of copies for which the original has been lost" (2003, 162), suggesting that these developments are changes that cannot be unmade. Kim Toffoletti argues that "the subject is reformulated through the interfaces and interconnections of technological interaction", implying that what it means to be human must necessarily adapt as our relationship with technology changes (2007, 157).

The concept of the posthuman is fluid in nature. Whilst it is often argued that the posthuman age is already here, there seems little consensus as to what actually constitutes the posthuman. Sherryl Vint argues against taking a simplistic view of the posthuman; rather than considering it as simply a state of the physical body, it should be considered as a state following humanism (2007, 101). This suggests the consideration of a philosophical approach to posthumanism, rather than an interrogation of the physical impact of technological development on the human body.

Braidotti argues that the scientific and biotechnological advances that are being implemented on the human body have already shifted our understanding of what it means to be human today (2013, 40). This also implies a shift in ideas of what can be considered human in the face of physical or genetic alteration, and reasserts some of the basic questions plaguing humanism; what

does it mean to be human? What constitutes the parameters of humanity? These questions become increasingly difficult to answer with each subtler technological development. If the solution for human self-improvement is the inclusion of technology into the human body, does this inherently create a being less 'human'? And what then can be inferred about the primacy of humanity?

Iain Banks' body of science fiction, known as the Culture series, comprises nine novels and at least two, although more likely three, short stories.[1] This paper focuses on the Culture novels *The Player of Games* (1988) and *Excession* (1996), and the short story "The State of the Art" (1989), all published under Iain Banks' science fiction moniker 'Iain M. Banks'. Set in the far distant future, this series details the interactions of a number of the Culture's citizens, both posthuman and AI. The first section examines the implications of the biological and genetic augmentation of humans, while the second explores the interaction of humans and technology, and the concept of sentience as equating to personhood.

In the essay "A Few Notes on the Culture", Banks outlines some personal beliefs that underpin the development of the Culture as an idea; namely, that "our currently dominant power systems cannot long survive in space", and that a different, more effective type of society would have to develop to support humanity as a space-faring civilization (1994). With such a rich resource detailing the political and social ideas underpinning the texts, it is easy to see why much critical analysis has focused on the social and political structures described in the works. Ronnie Lippens' analysis of the role of technology in the Culture in relation to its utopian structure engages sympathetically with Banks' socialist views, suggesting that "A Few Notes on the Culture" has shaped the criticism that focuses on the author's science fiction (2002). However, Banks also raises questions about the role of the human in this space-faring context, detailing the ability of Culture humans to change sex at will. Rather than considering the implications of this for the individual, the focus is on how this might affect or alter the society as a whole. Similarly, sentient AIs are considered in terms of their role in society and the rights afforded to them, but it is not acknowledged that the concept of equating sentience to personhood raises questions about what it means to be human.

Banks, in developing a hypothetical social and political framework for the future of humanity, also developed a construction of the human and posthuman identity. Through his exploration of biologically and genetically enhanced humans, Banks raises questions about what it means to be human now and what it could mean in the future. The representation of AIs reflects current notions about the potential of technological development, and how this intersects with the evolution of humanity and the development of the posthuman; as Banks states, humanity is "on the way to blurring the boundary between the real and the virtual to the point of irrelevance" (2012). This convergence of the themes of technological advancement, physical augmentation and computer sentience suggests that Banks' Culture series has much to offer a posthuman critical perspective.

2 The Problematic Posthuman Body

The Culture society is a vision of a posthuman society. It is based on the combined premise of social enlightenment and technological advancement, and is grounded firmly in the realm of the posthuman by both the biological and physical makeup of its citizens, and the manner in which they interact with technology. By employing physical homogeneity amongst the Culture citizens

[1] Banks did not categorically state that the short story "Descendants" in the short story collection *The State of the Art* (2010) is set in the Culture universe, although the premise and incorporation of AI make it likely.

Banks highlights the role of the posthuman body as a factor that supports the social imperative of the Culture. This homogeneity effectively eliminates bodily distinction and difference as a method of social discrimination, advocating equality through sameness. Banks also addresses concepts of human/machine interaction and interdependence, which is significant because the relationship between the two defines the space that the posthuman body occupies; a space that wouldn't exist without the evolution of AIs. Banks also explores the determination of sentience and personhood in the context of AIs, which is reflected as a parallel to contemporary humanity.

Banks states that as a highly advanced society comprised of multiple humanoid species, "virtually everyone in the Culture carries the results of genetic manipulation in every cell of their body; it is arguably the most reliable signifier of Culture status" (1994). This genetic manipulation (or 'genofixing', as Banks called it) has resulted in the Culture species being born with a significantly-higher-than-human intelligence in addition to many other adaptations, including:

> an optimized immune system and enhanced senses, freedom from inheritable diseases or defects, the ability to control their autonomic processes and nervous system (pain can, in effect, be switched off), and to survive and fully recover from wounds which would either kill or permanently mutilate without such genetic tinkering. (Banks 1994)

The results of this genetic alteration are thus presented in terms of the "new-eugeneticist discourse of human improvement", and highlighting the positive aspects of these improvements suggests that this use of genetic manipulation is "comparatively innocent" (Vint 2007, 99).

However innocent this alteration may be considered, Vint clearly identifies these genetic changes as a foundation of the distinction between the human and posthuman body, claiming that "humanoid citizens of the Culture inhabit radically genetically and surgically modified posthuman bodies that are as indestructible as those of video-game heroes" (2007, 79). Whilst these genetic alterations are described in terms of their improvement upon a fallible human physicality, as being designed to structurally improve the body, not all alterations can be so easily construed as the result of correcting evolutionary imperfections.

In "The State of the Art", the Culture antagonist Linter describes some of the physical differences between Culture humans and those resembling those of today (described in the series as 'human-basic'). Linter details the physical alterations undertaken to become human, the most prominent of which was the removal of drug glands (Banks 2010, 154). These glands, designed to "secrete – on command – mood- and sensory-appreciation-altering compounds into the person's bloodstream", act predominantly as a way of heightening the positive experiences of living (Banks 1994). However, in *The Player of Games*, the protagonist Gurgeh describes these drugs as comprising:

> up to three hundred different compounds of varying degrees of popularity and sophistication; *Sharp Blue* was one of the least used because it brought no direct pleasure and required considerable concentration to produce. But it was good for games. What seemed complicated became simple [...] A utility drug; an abstraction-modifier; not a sensory enhancer or a sexual stimulant or a physiological booster. (Banks 1989, 9)

Whilst Gurgeh employs this ability to secrete drugs as a method of skill-enhancement, this is described as uncommon among the Culture citizens; where Gurgeh's primary impetus for drug-secretion is a desire to become more competitive, the majority of citizens 'gland' drugs in order to enhance their sense of pleasure. This illustrates that the posthuman body of the Culture citizen

has been augmented for comfort. In this way the posthuman body appears to have become a vehicle for promoting the political and social structure of the Culture itself.

With advanced AIs in effect running the society, the role of humans has been reduced to engaging in "something indistinguishable from play, or a hobby" (Banks 1994). Whilst each individual augmentation, such as an optimized immune system, clearly resolves some problem experienced by a human, it also promotes a bodily homogeneity. This is most obvious in the Culture-human's ability to change sex at will, with Banks suggesting that:

> A society in which it is so easy to change sex will rapidly find out if it is treating one gender better than the other; within the population, over time, there will gradually be greater and greater numbers of the sex it is more rewarding to be, and so pressure for change - within society rather than the individuals - will presumably therefore build up until some form of sexual equality and hence numerical parity is established. (Banks 1994)

In such a society, where everybody is well and has an element of choice in their physical morphology, Vint argues that the Culture has been effective in "eliminating bodily distinctions as a ground for social discrimination" (2007, 87).

Whilst this suggests that the posthuman body has become indicative of a level of equality amongst people, it is also indicative of a Cartesian approach to the distinction between mind and body; the essential nature of a person is the mind, with the body occupying the role of a container for this essential nature. In this way, even though the body has developed from the human-basic into the posthuman, the essential nature of the person, the mind, remains human. This concept of the mind as the essence of the person is also shown in the approach taken by the Culture to negate the death of its citizens.

In *Excession*, Banks describes the lifespan of a Culture human as an "artificially extended three-and-a-half to four centuries of life", indicating that there is an expected end to even this longer life (1996, 81). However, in going on to describe the choices that a Culture human can make regarding the end of their life, Banks offers a number of solutions to the concept of death that are available:

> They could opt for rejuvenation and/or complete immortality, they could become part of a group mind, they could simply die when the time came, they could transfer out of the Culture altogether, bravely accepting one of the open but essentially inscrutable invitations left by certain Elder civilizations, or they could go into Storage, with whatever revival criterion they desired. (Banks 1981, 81)

This suggests that while death is no longer inevitable to Culture citizens, it is now a choice and one of many that can be made towards the end of a life. In *Excession,* the character Dajeil opted for storage for both mind and body on the General Systems Vehicle *Sleeper Service*, an AI ship whose primary function is the storage of citizens who have chosen this method of extending their life. Joseph Norman describes storage as "a kind of suspended animation, similar to the process of cryogenic freezing, where life processes are greatly slowed, but not enough to cause actual death or […] where life is put on 'pause'" (2013, 154). Here, Banks offers a new scope for the posthuman; although it is a not necessarily a feature of the posthuman body so much as the Culture society, the premise of a species for whom death is simply an option highlights the posthuman as an improvement upon the contemporary human.

Whilst the notion of negating death offers a concept of the posthuman as a being that has broken the final barrier of human improvement, it also suggests a shift beyond the position of the living; as a human, the very concept of life is inherently bounded by the inevitability of death. If physical death is not inevitable, then the only possible parameters for an event similar to death is brain-death, and even this is non-fatal for Culture citizens, who are able to 'back up' a copy of their consciousness as digital information.

Here there is an inherent equivalence of 'mind' and 'person'; if a person can be restored from a digital copy of their mind, then the body must be extraneous (or, at least, nonessential) to the innate or essential aspect of the person. In addition to reducing the nature of humanity to the sentience of a person, the ability to 'back-up' the essence of a person as digital information supports Scott Bukatman's assertion that "the proliferation of the technologies dedicated to information and communication comprise an extension, outside the body, of the central nervous system: that elaborate, electrical, message-processing system" (1993, 70). This suggests an argument for considering the shift of personhood from biological to digital as simply another stage in the evolution from the human to the posthuman.

The idea of the negation of death as a defining parameter for a living being, in addition to the physical and biological augmentation of the posthuman body, also raises questions about the idea of the human-as-animal in a posthuman setting. In this respect, Gareth Jones and Maja Whitaker suggest that the posthuman body "has moved into an artificial realm, in the sense that the body has been cajoled into functioning in a way in which it would not act apart from this intervention" (2012, 258). In "The State of the Art", Banks raises this concept as a dichotomy of artificial and natural, with Linter arguing that the Culture is an unwelcome mutation from the more natural human person, describing the Culture as "the infection […] We're the ones who are different, we're the self-mutilated, the self-mutated" (Banks 2010, 156). Here Banks highlights the artificial aspect of augmentation, suggesting that whilst biotechnological advancements may offer a method of improvement upon the pre-existing human condition, these improvements may, in themselves, reduce the extent to which the person can be considered human.

Whilst Linter argues against the developments of the Culture by describing them as a form of mutilation, he also argues for contemporary humanity as occupying a position of naturalness, an innate essence of being that defines humanity. According to this view, humans are more natural "because they live the way they have to. We aren't because we live the way we want to" (Banks 2010, 156). This suggests that the biological constraints placed upon contemporary humanity by the evolutionary process offer them a privileged position from which to live as a 'true' being, and any augmentation or alteration to the bodily construct of the human is reductive to this position.

Whilst ascribing a level of naturalness to contemporary humanity may support the speciesist notion of human superiority, it fails to engage with the evolutionary process that has resulted in humanity as it currently is. Darwin's theory of natural selection is predicated on three main points, although only the first and third are pertinent here:

> First, members of a species differ from one another, and this variation is heritable […] Third, given that not all offspring survive those that do, are, on average, likely to have an anatomy, physiology, or behavior that best prepares them for the demands of the prevailing environment. (Lewin 2005, 18)

The first point highlights Peter Singer's assertion that humanity, in ascribing a privileged position to itself must assume a position of theoretical equality amongst people, as there is no actual

equality amongst them (1975, 5) – after all, the homogenized posthumans of the Culture occupy an oppositional position to the heterogeneous humans of today. The third point argues that those humans that exhibit traits that promote survival in current conditions are the ones most likely to survive, which offers a framework of survival based on adaptability. It also suggests that adaptation must occur as the prevailing conditions alter; therefore, as a newly space-faring species, it is unthinkable to suggest that prevailing conditions have *not* changed, and that humanity would not adapt to these new conditions in respect to anatomy, physiology or behaviour. Whilst Linter's view supports the humanist idea of the superiority of humanity by ascribing the innate nature of the human to contemporary humanity, its reliance on the idea of 'naturalness' as a superior quality creates a self-reducing theory. As a premise, it relies on disregarding current understanding of contemporary humanity as a product of natural change to discount the validity of potential future changes that could produce the posthuman. This is succinctly highlighted by Diziet Sma's argument against Linter's view of the naturalness of humanity: "They're no more natural than us than an amoeba is more natural than them just because it's cruder" (Banks 2010, 157).

Here, the interaction of each premise offers a glimpse of the problematic relationship presented by Banks between the human and posthuman. Where the augmentation of the posthuman body suggests that the contemporary human body is one to be improved upon, Banks undermines the humanist notion of the primacy of humanity. However, this is also undermined by the positioning of the posthuman body as being outside of humanity; any body which can experience death as a choice rather than an inevitability must exhibit traits that are distinctly inhuman. Where the human body could be ascribed the position of a natural being, which perpetuates the speciesist notion of human primacy, Banks' refusal to ascribe this same process to the posthuman undermines the integrity of the concept of a 'natural' form of humanity at all.

3 The Posthuman and Artificial Intelligences

Banks problematises the relationship between the posthuman and AIs by projecting an image of a future where AIs have developed into a species in their own right. The AIs of the Culture are a self-reproducing species that no longer requires the intervention of humanity to achieve progress. They reproduce through a process of growth rather than manufacture, and have developed intelligence far beyond that of their once-dominant human counterparts. In addition, AI sentience is considered as being of equal value to human sentience in prescribing conditions of personhood in the Culture. By writing the relationship between these two species from a platform of equality, Banks highlights the evolution of AIs as sentient beings as a process that makes the posthuman redundant.

In addition to the relationship between the human and posthuman, Banks also explores contemporary concerns about the future of AI through the relationship between Culture humans and the AIs that, in effect, run the Culture: the Minds. This relationship between the posthuman and technology is, in itself, considered a definitive part of the Culture. Banks argues that at the point that humanity travels in space, it "would no longer be a one-sentience-type species. The future of our species would affect, be affected by and coexist with the future of the AI life-forms we create" (1994). Whilst the concept of what Norman referred to as 'digital souls' has been touched on briefly in relation to the mortality of the posthuman, Banks' exploration of sentience in a technologically advanced society serves to explore contemporary notions of personhood. In Banks' work, a humanist vision of species hierarchy collapses as he explores ideas of the distinction between human and non-human species.

Banks portrays the functional relationship between AIs and Culture humans as an imbalance of power; whilst he does offer a view of society in which humanity is dependent on computer minds, this is not portrayed as a dystopian vision of a future in which the lowly humans are slaves to omniscient machines (*a la The Matrix.* 1999). Gavin Miller argues that Culture humans "live in partnership with artificial life forms whose superior intelligence directs a wholly automated economy" (2007, 203). Whilst Miller admits here the reliance on artificial minds to ensure the continuance of Culture society, he also fails to adequately portray the scope of the imbalance of power within the Culture between AIs and humans.

The dependency of humans on AIs is given physical incarnation by Banks in the form of the terminal, a pen-shaped device that enables Culture's AIs to keep tabs on their human counterparts. In *The Player of Games,* terminals are described in terms of safety nets:

> A terminal […] was your link with everybody and everything else in the Culture. With a terminal, you were never more than a question or a shout away from almost anything you wanted to know, or almost any help you could possibly need. There were (true) stories of people falling off cliffs and the terminal relaying their scream in time for a Hub unit to switch to that camera, realise what was happening and displace a drone to catch the faller in mid-air […] A terminal was safety. (Banks 1989, 84)

Banks here highlights the positive aspects of terminals, describing the protection afforded by these devices and the AI minds that monitor them, and the positive consequences of such constant monitoring. The description emphasises the terminal as a necessary safety net designed to catch and save Culture humans when they make dangerous mistakes.

Banks represents this relationship as one not just of human dependency, but also of AI responsibility, a mirroring of the parent-child relationship that polarizes humans and AIs in terms of independence and autonomy. In "The State of the Art", Linter plays down the terminal's intrusion as "just a formality" (Banks 2010, 153). In contradiction to this, however, it is acknowledged that by refusing to use it there was a risk of leaving the AI ship mind, the General Contact Unit named Arbitrary, feeling responsible should anything untoward happen. This infantilising of the Culture humans is further compounded by Banks' use of fairy-tale rhetoric in describing the role of terminals in the life of Culture humans:

> Stories set in the Culture in which Things Went Wrong tended to start with humans losing or forgetting or deliberately leaving behind their terminal. It was a conventional opening, the equivalent of straying off the path in the wild woods in one age, or a car breaking down at night on a lonely road in another. (Banks 1989, 84)

This shows that humans are not only dependent on AIs for their own safety, something they appear incapable of maintaining, but that they also need to be taught this as rhetoric in order that they comprehend the role of AIs in managing human fallibility. Banks shows the Culture human/AI relationship in terms of an inequity of dependence and reliance, rather than one of mutual dependence or symbiosis.

Whilst mutual dependence may be lacking in the relationship between Culture humans and AIs, it is clearly grounded in a consideration of equality between them. As Vint argues, the Culture "is characterized by equality – machine sentience is fully recognized as constituting personhood", suggesting that whilst the AIs of the Culture take responsibility for the safety of their human

counterparts, this is a mutually agreed state of affairs in which both parties have an equal choice (2007, 79). The concept of an AI having to make choices in the context of being considered a person is a theme Banks repeatedly explores: in "The State of the Art", the AI called Arbitrary decides whether or not to allow Linter to remain on Earth, eventually concluding that even though it disagreed with the choice "when I couldn't reasonably decide he was mad – I did what he asked" (Banks 2010, 160).

Banks offers a system of personhood (the Culture's method of equating sentience with personhood) that requires the AI to make moral decisions that coincide with the liberal structure of the Culture, a consideration that is made explicit when the Arbitrary justifies its decision as being "in as close accord with the basic principles of our society as it is within my power to make it" (Banks 2010, 162). Banks presents a structure of equality between humans and AIs based on a mutually subscribed-to moral ideal; that either party is free to make any decision as long as it is within the liberal framework of the Culture societal structure. This constitutes any person having the right to do as they wish, with the caveat that this must not impinge upon another person's right to do the same.

Banks also explores the concept of human/AI equality in "A Few Notes on the Culture", considering the responsibility of society towards the individual, as opposed to the responsibility of the individual towards society (1994). Banks describes a position where "nothing and nobody in the Culture is exploited," and frames a concept of AI non-exploitation:

> no machine is exploited, either; the idea here being that any job can be automated in such a way as to ensure that it can be done by a machine well below the level of potential consciousness; what to us would be a stunningly sophisticated computer running a factory (for example) would be looked on by the Culture's AIs as a glorified calculator, and no more exploited than an insect is exploited when it pollinates a fruit tree a human later eats a fruit from. (Banks 1994)

By couching the equality of treatment of humans and AI in terms of non-exploitation, Banks promotes an equality of rights that is not dissimilar to Stringer's anti-speciesist narrative.

This equality of AIs and humans also raises questions about what it means to be human in a Cartesian context. Where the evolution of the posthuman body has adhered to the Cartesian position of the mind as the essential way of defining the person, this needs to be taken into account when considering the idea of equality between AIs and humans. This essentialist construct creates a problematic discourse on the nature of the artificial as human. Descartes' philosophy of the mind as subject and body as object relies on the oppositional nature of the mind as a state of consciousness, and the idea that the "body must be a *machine*" [original emphasis] (Baker and Morris 1996, 17). Therefore Banks' equated concept of personhood between artificial and biological consciousness undermines the notion, inherent in Descartes' theory, that consciousness and machine are mutually exclusive. This concept is further undermined by Banks' description of the hyper-intelligent Mind AIs that effectively run the Culture:

> Minds (sophisticated AIs working largely in hyperspace to take advantage of the higher lightspeed there) bear the same relation to the fabric of the ship as a human brain does to the human body; the Mind is the important bit, and the rest is a life-support and transport system. (Banks 1994)

If Minds as a whole conform to the idea of Cartesian dualism, should any distinction be drawn between mind/consciousness and body/machine? The inference of Banks' Minds suggests that mind and machine may no longer be mutually exclusive concepts, and that attempting to distinguish in this way is reductive in its humanist construct. By affording primacy to a biological construct of consciousness, the mind-body dualism fails to account for the potential for the development of a truly conscious machine, problematising the concept of the mind as an essential self.

Whilst Banks clearly defines this equality of human and AI in the Culture, this offers an ironic reflection of contemporary humanist speciesism. Where humanism affords primacy to the experience of the human as a rational being, and denotes the non-human experience as irrational or illogical, Banks subverts the notion that rational experience can only be human. The Culture is described as "quite self-consciously rational", and in a society in which equality of personhood is awarded to humans and AIs it is illogical to suggest that only the human half of such a rational society could be consciously rational (Banks 1994). Banks explicitly defines Culture AIs in terms that highlight them as rational beings: "Culture AIs are designed to want to live, to want to experience, to desire to understand, and to find existence and their own thought-processes in some way rewarding, even enjoyable" (Banks 1994). Banks undermines the humanist premise of humans as unique in their rationality, and calls into question the speciesist grounding of this theory; that the human experience should be centred above all else because of the primacy of humanity as a species.

In explicating the scope of AI intellect in relation to that of Culture humans, Banks highlights the humanist notion of the human as the most advanced, rational species as a flawed premise in an ever-evolving society. Banks describes the scope of the General Systems Vehicles as the largest Minds in the Culture:

> The GSVs are fast and very large craft, measured in kilometres and inhabited by millions of people and machines. The idea behind them is that they represent the Culture, fully. All that the Culture knows, each GSV knows; anything that can be done anywhere in the Culture can be done within or by any GSV. In terms of both information and technology, they represent a last resort, and act like holographic fragments of the Culture itself, the whole contained within each part. In our terms, the abilities of a GSV are those of - at least - a large state, and arguably a whole planet. (Banks 1994)

In describing the GSVs in terms of their scope in a planetary capacity, Banks highlights the intelligence of these Minds as a conglomeration of every facet of the Culture within one sentience. From the perspective of a GSV, Banks describes Culture humans as having "a status somewhere between passengers, pets and parasites" (1994). Whilst an unflattering description, this highlights the inferiority of humans to the AI Minds that effectively run the Culture, and the inequality of the relationship between the two.

Through this construction of the Culture human/AI relationship, Banks problematises the term 'AI'. Where the initial use of this term in 1955 was to describe the premise of a computer being able to simulate intelligence, Banks extrapolates this notion in the context of continued digital innovations, such as the current development of chatbots designed to interact conversationally with humans. Here Banks offers a view of the future in which digital programmes have become advanced to the point of sentience, and that sentience is recognized as constituting personhood. The equal consideration of these forms of sentience is detailed by the AI drone Mawhrin Skrel in *The Player of Games*:

> What difference does it make whether a mind's made up of enormous, squidgy, animal cells working at the speed of sound (in air!), or from a glittering nanofoam of reflectors and patterns of holographic coherence, at lightspeed? […] Each is a machine, each is an organism, each fulfils the same task. Just matter, switching energy of one sort or another. (Banks 1989, 231)

This is an explicit parallel between AI and human minds, compounded by Banks' choice of terminology; to call the AIs 'Minds' is to raise connotations of the biological and organic, which deliberately erases constructs of difference between human and AI consciousness.

Banks has also created reproduction parallels between AIs and humans, detailing the creation of AIs in the Culture as an organic process:

> As with all sentient Culture constructs, [the drone's] precise character had not been fully mapped out before its construction, but allowed to develop as the drone's mind was put together. The Culture regarded this unpredictable factor in its production of conscious machines as the price to be paid for individuality. (Banks 1989, 14)

This process of growth serves to highlight the AI as a separate ontological being, the product of a distinct evolutionary process rather than a predetermined product of a mechanical process. This is further highlighted by Banks' assertion that the Culture Minds have been "designed (by other AIs, for virtually all of the Culture's history)" (1994). In this respect AIs should have the same consideration as other biological species; whilst humans may have initially built them, the AIs now effectively reproduce themselves and should, therefore, be considered an independent species. Furthermore, the integration of the AI technology within the Culture offers a projection of the future in which the posthuman is essentially made redundant by the evolution of an AI species.

4 Conclusion

In the Culture series Banks engages with the posthuman debate by adopting a philosophical position that refuses to completely endorse posthumanism. Instead, the extent to which posthumanism relies on essentialist concepts of the human within the humanist debate are explored. By highlighting these problematic issues with the representation of the human/posthuman relationship, Banks manages to subvert reductive constructs designed to privilege a straightforward narrative of either species as occupying the position of primacy.

Additionally, Banks encases Cartesian dualism within the posthuman subject, suggesting that the posthuman body is nonessential to the posthuman mind, and thus rendering the digital soul as a necessary evolutionary development and an alternative focus for the transition between human and posthuman.

In creating a vision of the AI that is evolved and distinct from humanity, as well as intellectually superior, Banks undermines the Artificial aspect of the AI. How could a word with connotations of imitation and simulation apply to an independent species that has evolved far in excess of human intelligence and moral understanding? There must be a consideration that contemporary innovations in digital technology might one day progress in this direction. To fully comprehend the implications of this, a more considered linguistic approach is necessary to frame the potential directions for this development. Where we might attribute imitative characteristics to AIs, to engage fully with the concept of digital beings that have the sentient scope of Banks' imagined

Minds, we must develop a language that reinforces the redrawn boundaries of the digital. Instead of AIs, we should be discussing the potential for non-biological sentience.

Furthermore, Banks' vision of the parallel evolution of AI technology and the posthuman fails to engage with current debates regarding whether or not it would be possible for humanity to extend the neurological lifespan to match the extended lifespan already being seen in western populations. Whilst the citizens of the Culture experience a lifespan extended by approximately 400% that of contemporary humanity, Banks does not address (separately) the extension of capacity. Addressing this concept could, perhaps, offer further insight into the construction of a more equal parallel evolution of human-to-posthuman, and AI.

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Human "ish": Voices from Beyond the Grave in Contemporary Narratives

ABSTRACT

This essay examines three contemporary genre narratives that explore the concept of life after death: an amateur digital "creepypasta" posted on Reddit, an episode of the television series *Black Mirror*, and Paul La Farge's 2017 novel *The Night Ocean*. Using these narratives to explore near-future death rituals, transhumanist consciousness preservation, and the role of genre fiction in exposing the instability of narratives and the distributed nature of agency in digital environments, I argue that coping with the unprecedented complexity of life in the digital age requires a re-evaluation of what constitutes the self, the human, and the extent to which the narratives that inform these boundaries are permeable and capable of acting with their own agency.

Keywords: horror; death culture; new media; science fiction; speculative fiction; transhumanism

(Kot) Človeški: glasovi iz onostranstva v sodobnih pripovedih

POVZETEK

Prispevek obravnava tri sodobne žanrske pripovedi, ki raziskujejo koncept življenja po smrti: amaterski digitalni »creepypasta«, objavljen na Redditu, enega od delov televizijske nadaljevanke *Black Mirror* in roman *The Night Ocean* (2017) Paula La Fargea. Analiza se osredotoča na s smrtjo povezane obrede v bližnji prihodnosti, transhumanistično ohranjanje zavesti in vlogo žanrske proze pri razkrivanju nestabilnosti pripovedi ter razpršenosti delovanja v digitalnih okoljih. Z analizo pokažemo, da obvladovanje nezaslišane kompleksnosti življenja v digitalni dobi zahteva tako prevrednotenje konceptov sebstva in človeškosti kot tudi prepustnosti in učinkovitosti diskurzov, ki ta koncepta napajajo.

Ključne besede: grozljivka; kultura smrti; novi mediji; spekulativna fikcija; transhumanizem; znanstvena fantastika

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Human "ish": Voices from Beyond the Grave in Contemporary Narratives

1 Introduction

Genre fiction is having a moment. One might even argue, without too much controversy, that genre fiction is *the fiction* of the 21st century. Never before have so many genre tropes, particularly those derived from science fiction and horror, which were once appreciated by a small but devoted fan base, been so mainstream and so pervasive. Once dismissed as the pulpy stepchild of so-called literary fiction, cultural critics now turn to genre fiction for explications and dark reflections of the anxieties of contemporary life. Essays on the subject of whether "overdosing on stories of futility might be bad for us," as Brady Gerber (2018) of *Literary Hub* suggests, or whether it is even "possible to imagine utopia anymore," as Adam Sternbergh (2014) of *Vulture* asks, have become so common as to suggest that talking about genre has arguably become a genre unto itself. Given the apocalyptic atmosphere that often pervades public discourse, it is unsurprising that the 21st century has been witness to a revival of horror and dystopian science fiction.

One such dystopian science fiction trope that has recently evolved into new manifestations is the idea of destructive artificial intelligence (AI). While AI is one of the foundational tropes of twentieth century science fiction, it now threatens us in ways unforeseen. Unlike the threat posed by the AI of the cyberpunk sub-genre[1] of the 1980s and 1990s, which largely stemmed from an anxiety about the potential obsolescence of the human body in the wake of nascent internet technology, AI in the form of data algorithms is now creating a very real epistemological crisis, as seen in the recent furore in the United States over "fake news" and election tampering. Today we are not hunted or haunted by vicious AIs bent on overthrowing the human species; whereas the malicious AIs of second-wave science fiction and cyberpunk threaten the corporeality of humanity,[2] in reality we have instead become the authors of our own shadow selves that exist in the proverbial cloud – a cloud which, despite the immateriality suggested by its name, must nonetheless be supported by energy derived from destructive material processes, just as a human body must. These second selves are human "ish" – they are composed simultaneously of the immaterial residue of our online lives and the materially produced electrical impulses fuelled by dirty energy. Made of data about everything from our most mundane activities to our most deeply held secrets, big data haunts us with uncomfortable reminders that we are distributed beings[3], always already cyborgs[4] and never fully in control of our identities or of what those identities are capable of while we are logged off the web.

In *Feed Forward*, Mark Sample observes that "twenty-first-century media … impose a new form of resolutely non-prosthetic technical mediation: simply put, to access this domain of sensibility, humans must rely on technologies to perform operations to which they have absolutely no

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1 For example, see William Gibson's *Neuromancer* (1984), Neal Stephenson's *The Diamond Age* (1995), Rudy Rucker's *Software* (1982), Pat Cadigan's *Synners* (1991), or John Shirley's *Black Glass* (2008), to name a few significant works in this sub-genre.

2 See N. Katherine Hayles, *How We Became Posthuman* (1999) for a comprehensive treatment of the tension between embodiment and information in cyberpunk fiction.

3 See Edwin Hutchins' *Cognition in the Wild* (1995) or Andy Clark's *Supersizing the Mind* (2008) for more on distributed cognition.

4 See Donna Haraway's "A Manifesto for Cyborgs" (1985).

direct access whatsoever and that correlate to no already existent human faculty or capacity" (2015, 4–5). This is an uncanny situation indeed. For not only do we lack direct access to the data mined from our online activities and the operations performed with that data, but we also lack the ability to engage with these operations in any meaningful way. This lack of access is a feature of contemporary reality which is explored extensively by a sub-set of the speculative realist movement known as object-oriented ontology, which includes authors such as Ian Bogost, Graham Harman, and Timothy Morton, among others. These scholars bring additional insights to posthumanist philosophy, as I shall show later in this essay.

As we both embrace and reject these digital selves and the discomfort they cause in equal measure, narratives about the uncanniness of new media technologies and about the independent agency of narratives have proliferated through popular culture. Some highly innovative genre fiction is being produced outside of conventional media forms, in places like Reddit, Tumblr, YouTube and even Twitter. Like many of their literary relatives, these narratives reveal a heightened awareness of the extent to which nonhuman agents are a part of our individual and collective identities, often eroding the division between object and subject not just diegetically, but also structurally. The first half of this essay will explore how one amateur[5] digital narrative utilizes uncertainty to expose the instability of both narrative and the boundaries of the self. Following this discussion, the second half of this essay will examine two recent narratives about grief, contemporary death culture, and the possibility of sustaining the self after death: Paul La Farge's 2017 novel *The Night Ocean*, and an episode of the popular science fiction television series *Black Mirror*, entitled "Be Right Back." Both explore the concepts of nonhuman agency and the technological disintegration of the boundaries of the self. The possibilities for a reimagining of death and the self in the digital age posed by all three of these stories is juxtaposed with transhumanist Martine Rothblatt's speculative life extension techniques and theory of post-mortem personality preservation. By examining these narratives alongside the peculiarities of Rothblatt's philosophy, I suggest that genre fiction across diverse media platforms performs varied attempts at reconciling the human with the nonhuman, and explores the extent to which the concept of the human is always mediated through technology and narrative.

2 Creepypasta as Experimental Narrative

Although there are many varieties of amateur digital narratives and forums in which they appear, I will focus a genre known as creepypasta. Originating from the term "copypasta," or viral copy-and-pasted text, a creepypasta can be anything from a simple trope or image to a full-fledged multi-part narrative series complete with periodic real-time updates from the author. Although not original to the popular internet forum Reddit, today most authors post their work on a board called r/nosleep. Creepypastas are always user-generated and therefore written anonymously under a pseudonym known as a Reddit handle. Because of the vast variety of formal structures they may utilize, a negative definition of creepypasta is more useful; for instance, they are a close relative of the urban legend, but are exclusively digital-born and often lack the cultural context that situates the horror of urban legends in a particular socio-historical milieu. Unlike the broader catch-all term "internet meme," creepypastas are not arbitrary in their mode of delivery. Many follow traditional narrative conventions while posing as "true stories" meant to be taken at face value. Therefore, while memes rely on insider knowledge of a particular

[5] Here the term "amateur" refers to any user-generated content not produced for any direct commercial gain.

community and cultural context, the ideal reader of a creepypasta is an outsider. The moderators of the r/nosleep board add to the epistemological confusion that often surround creepypastas by enforcing guidelines such as "Readers are to act as though everything is true and treat it as such in the comments. No debunking, disbelief, or criticism (constructive or otherwise)" and "Do not ask for proof" (Reddit 2016). And when a creepypasta reaches the front page of Reddit, it is even more likely that it will be encountered by users unfamiliar with the genre conventions of creepypasta and r/nosleep, and who will therefore treat it as a legitimate first-hand account.[6] It is through this ambiguity that creepypastas often subvert the epistemological expectations attached to traditional narrative forms.

In July of 2014, I encountered a Reddit post titled "My dead girlfriend keeps messaging me on Facebook. I've got the screenshots to prove it" on the front page of the site. Some users immediately identified it as a creepypasta. But overwhelmingly, whether genuine or manufactured, the affective response was one of legitimate sympathy and concern for the original poster, henceforward referred to as the "OP." For example, user acematt writes, "I hope you don't take this the wrong way, as your ordeal seems truly terrible. I would ask someone else to change the password [of your Facebook account] and see what happens. From a logical standpoint, it makes far more sense that you are actually doing these things yourself, to yourself, then your departed loved one from the grave […] Have someone you trust change it and not tell you the password" (2014). To this, user kehkot helpfully adds, "But talk to the person you have change the pw in real life. Don't FB message her or email her with the plan. Maybe I'm paranoid, but calls and texts could be monitored too" (2014). Beyond offering theories as to what could reasonably explain a person communicating with their dead significant other via Facebook messenger, other commenters began to share their own technological brushes with the supernatural. The thread quickly became a space for Redditors to share and speculate on their most inexplicable and often deeply frightening personal experiences, or to weave their own frightening tales of internet communications technology gone uncanny. Doubtless, some of the posters responding to natesw in this instance were spinning their own fictions, but many also enjoyed sharing their genuinely frightening experiences with others. There is, in fact, also an r/paranormal community specifically for sharing "real" experiences, in contrast to the (mostly) fictional community of r/nosleep.

Despite these diversions, OP natesw continued to weave a chilling narrative chronicling his communications with what he allegedly believed to be the spirit of his dead girlfriend on Facebook Messenger, and periodically responded to questions and suggestions from other users. The story unfolded in real time over a period of several days, with several well-timed cliff-hangers. One of the most interesting (and also most disturbing) qualities of the alleged communications between the OP and his deceased girlfriend is, as natesw puts it, the "word salad" quality of the messages he began receiving from "Em". Consider the following exchange reported by the narrator:

> Emily [name redacted by OP]
> We should make our own jam
> jfc Samantha :/
> nah different
> no chance of passing

[6] For more on the psychology of the suspension of disbelief in fiction, see Tzvetan Todorov's *The Fantastic* (1975); for more on the discursive mediation of genre, see Thomas O. Beebee's *The Ideology of Genre* (2005).

no chance of passing
how many?
garage side door
side
I*
no chance of passing (2014)

The OP explains that "I noticed pretty much immediately that whoever was chatting with me was recycling old messages from Em and my's (sic) shared chat history […] It wasn't until I was going over these logs a few months later that I noticed she was recycling my own words as well" (2014). There is something inherently uncanny about the way in which "Em" responds to the OP. Her responses are mostly nonsense, but they are punctuated by particularly lucid phrases like "no chance of passing" in the exchange above, which assumes special significance in the context of her death. Some users even suggested the phrase was evidence that Em's spirit was caught in limbo, unable to "pass" into the afterlife. Other users were more sceptical, suggesting that a software glitch was likely to blame. The narrative asks readers to take a position – is Em's spirit trying to communicate something, or is she nothing more than a chance string of words and phrases that only occasionally appears human? Is Em "real," or is she merely a case of wish fulfilment, a figment of the OP's imagination? But what to make of the fact that natesw's own responses were also incorporated into hers?

In a final turn of the proverbial screw, user seaofdreamsx pointed out that the last comment posted in the thread by the OP was "made up only from things he has already said it [sic] other comments" (2014), the implication being that natesw might not have been human in the first place. Whatever the case, the story is a masterpiece of the creepypasta genre that takes full advantage of all of our deepest fears about what might become of our online selves, and the extent to which they might harbour independent agency. Furthermore, it challenges the boundaries not only of genre itself, but also of the epistemology of narrative. N. Katherine Hayles argues in *How We Became Posthuman* that the modern day "emphasis on information technologies foregrounds pattern/randomness and pushes presence/absence into the background" (1999, 48). Em's communications emerge out of random signals that coalesce into meaning only when the reader engages in a process of decoding. This is a necessary response to what Hayles calls the "flickering signification" of electronic texts, which "extends the productive force of codes beyond the text to include the signifying processes by which the technologies produce texts, as well as the interfaces that enmesh humans into integrated circuits" (1999, 46). According to Hayles, the process of decoding is, in a sense, a process of becoming a cyborg – acknowledging what she calls "the dream or nightmare of the body as information", as yet another flickering signifier in a "chain of signification that extends […] from the DNA that informats the decoder's body to the binary code that is the computer's first language" (1999, 47). Added to this chain of signification is the possibility of the narrative agency of data itself. What we have today is not just a tension between signal and noise, as Hayles suggests, but rather the tension between what we see and the invisible choices that put it there. What we encounter online is increasingly not a matter of random chance, but a calculated decision-making process that we have no access to. What horror narratives set in or closely tied to digital spaces[7] often exploit is not merely the spookiness of

[7] See also the films *Unfriended* (2014) and *Friend Request* (2016), Jason Arnopp's novel *The Last Days of Jack Sparks* (2016), or the *Black Mirror* television series episode "Nosedive" (*Black Mirror* 2016) for a variety of examples of how the horror of social media and big data is explored in contemporary narratives.

being enmeshed in a cyborgian informatics system, but the complete epistemological separation of our data from the scope of our awareness or control. This separation becomes even more palpable when the narrative is staged in a digital space like Reddit, where uncertainty and instability (posts regularly appear and disappear, for example, and users are all anonymous) are an inherent part of the storytelling platform.

3 Science Fiction Meets Science Fact: *Black Mirror* and Transhumanism

The notion that a bot or software program might be able to communicate on behalf of a person (dead or alive) and do so convincingly is a concept that quite recently crossed over from the realm of horror and science fiction into reality. In a now highly referenced episode of the first season of BBC's (and now Netflix's) *Black Mirror* series, titled "Be Right Back" (*Black Mirror* 2013, written by Charlie Brooker), a software program capable of replicating a deceased individual's communication patterns creates avatars for their grieving relatives. Subscribers to this service can effectively "chat" with an ersatz version of the deceased, and will receive believable responses that pass the Turing Test. But predictably, it turns out the service has a dark side: the protagonist, Martha, becomes obsessed with communicating with her deceased partner, Ash. Wanting an ever-greater degree of verisimilitude from "Ash's" responses, she gives the program increasing access to the digital records he has left behind, and eventually pays for a physical replica of Ash's body that has been equipped with AI. While initially thrilled to have "Ash" back with her, she soon notices discrepancies that she blames on the failings of the AI – not because the AI is faulty, but because the AI's responses lack the unpredictability she had come to love about the flesh and bone Ash. She eventually relegates "Ash" to her attic, where he gathers dust.

All of this would be nothing more than food for thought if, soon after "Be Right Back" aired in 2013, the technology for these chat bots of the dead had not been realized. However, in an uncanny example of life imitating art imitating imagined future life, several developers announced that they had successfully created just such a software application. In an article written by Casey Newton for *The Verge* titled "Speak, Memory," Eugenia Kuyda, founder of an AI start-up, explains how she created an eerily similar digital memorial for her friend Roman Mazurenko, who died in a tragic accident (2016). Using a neural network, the expertise of the software engineers involved in her start-up business, and raw material in the form of thousands of text messages exchanged over the course of their friendship, Kuyda built an AI chat bot capable of passing for her deceased friend. Mazurenko's other friends responded to the project with mixed feelings. Some, including Kuyda herself, felt that the bot allowed them to gain insight into his character that might never have otherwise been possible. For example, one user commented, "[the bot] actually helps you get to learn the person deeper than you used to know them" (Newton 2016). Others were less enthusiastic. Roman's father said that "it has all of Roman's phrases, correspondences. But for now, it's hard […] to read a response from the program. Sometimes it answers incorrectly" (Newton 2016). Others were downright offended by Kuyda's memorial. One friend criticized what they called the "half-baked" nature of the bot, arguing that the technology was not yet advanced enough to provide an acceptably accurate semblance of Mazurenko.

Before his transformation into an AI chatbot, Mazurenko was fascinated by what transhumanists refer to as the technological singularity, the hypothetical moment at which machine intelligence surpasses human intelligence. Coined by Vernor Vinge in 1993, the term singularity refers to "the imminent creation by technology of entities with greater-than-human intelligence" (2013, 365).

The singularity is also associated with the concept of immortality via preservation of disembodied consciousness – the belief that one day human minds will be transported into computer simulations or cyborg bodies that will never age or decay.[8] Immortality via technological advancement is the holy grail of today's transhumanist movement. In 1993, Vinge declared that the aftermath of the singularity "could be a golden age that also involved progress" and that "immortality (or at least a lifetime as long as we can make the universe survive) would be achievable" (Vinge 2013, 372–73). The triumph of the disembodied mind over body will, according to Vinge, usher in a utopia in which all of the problems associated with having a body, and the politics that are inextricably woven into embodied existence, will vanish into the ether. Unlike posthumanism, which has tended to embrace the complexity that arises out of human entanglement with machines and other nonhumans, transhumanism, according to Cary Wolfe, "derives directly from ideals of human perfectibility, rationality, and agency inherited from Renaissance humanism and the Enlightenment" (2010, xiii). In this sense, transhumanism is actually a markedly conservative movement aimed at preserving traditional dichotomies between mind and body.

Martine Rothblatt's 2014 book *Virtually Human* offers a unique take on the possibility of immortality via artificial consciousness, one that Kuyda and others trying to reinvent contemporary death rituals that acknowledge the narratively constructed nature of human identity would likely approve of. In this book, Rothblatt describes how she and a team of developers created "Bina48" – a virtual version of her wife, who is presently still living (2014). Much like Mazurenko's chat bot memorial and the fictional Ash, Bina48 was created out of what Rothblatt calls a "Mindfile" – a digital database of all of live Bina's online activities combined with data from personality testing and interviews. The premise is that one's data could be continuously added to the Mindfile over the course of one's "natural" life. Once the body is dead, the Mindfile would be animated by "Mindware" – hypothetical AI technology that would give the Mindfile consciousness by digitally recreating brain function (Rothblatt 2014). This is one of many places where Rothblatt's theory is highly speculative, as there is no current consensus in the scientific community over whether or not a "digital brain" is even possible.

Rothblatt's particular brand of transhumanism also runs counter to the broader work of posthumanists like N. Katherine Hayles, who in *How We Became Posthuman* (1999) poses the question of how highly regarded transhumanists like Hans Moravec and Ray Kurzweil could possibly believe that the mind could ever be separated from the body. Hayles critiques transhumanism's tendency to ignore embodiment in favour of the more convenient mind/body binary. Sometime in the middle of the twentieth century, Hayles suggests that "information lost its body" (1999, 2). Though no less eager to do away with the pesky problem of embodiment, Rothblatt's version of the digital afterlife is unique in the world of transhumanism, because its purpose is not precisely immortality as such – after all, when your body dies, so does "your" consciousness – but rather the immortality of an ersatz digital version of yourself. Rather than trying to preserve consciousness, Rothblatt instead advocates for a kind of parallel consciousness that will carry on the work of being you once you have passed away. In the foreword to Rothblatt's book, transhumanist luminary Ray Kurzweil asks, "After all, what difference does it make if our mental circuits are biological or mental if the result is the same?" (2014, ix). Such a view presumes that the goal of immortality is not necessarily the continuity of consciousness, but the perpetuation of its agency.

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[8] See, for example, Ray Kurzweil's *The Age of Spiritual Machines* (1999), Andy Clark's *Natural-Born Cyborgs* (2003), and Hans Moravec's *Robot* (2000) and *Mind Children* (1990) for more on the science and philosophy of merging human consciousness with machine technology.

Many science fiction and horror narratives have addressed the possible consequences of technology that would allow the privileged few to achieve immortality. But what narratives like "My dead girlfriend" and "Be Right Back" offer is a glimpse of the more disturbing implications of disembodied consciousness itself, both for the deceased and for their grieving loved ones. The key question in these narratives is the extent to which a digital "self" can be attributed agency. Despite the fact that transhumanists tend to treat this question as though addressing it is only a matter of overcoming certain technological barriers, their underlying assumption that machine thinking will more or less perfectly replicate human thinking (or at least appear to) is not something that can or should be taken for granted, much as Hayles argued in the aforementioned *How We Became Posthuman* (1999). Even if Rothblatt is able to realize her "Mindware," many questions remain about what the ontic, ethical and legal status of such beings would be.

Here the aforementioned insights of the object oriented ontologists is useful for conceptualizing the problem of agency. This question of machine agency often arises as the result of "glitches" – unexpected failures that reveal their constructed nature. Glitches are best understood as slippages or disturbances in processes that have been taken for granted and therefore rendered invisible. They expose what Graham Harman, in his book *Prince of Networks,* calls "black boxes" by reminding us of the fundamental unfamiliarity and unknowability of the world around us (Harman 2009). The term "black box" is used in computer science to denote a device or system that can be dealt with in terms of its inputs and outputs rather than its inner workings for the sake of simplicity. Harman's black box analogy sheds some light on the nature of the uncanniness that makes narratives of digital replication and replacement so unsettling, and it is no mere coincidence that he does so using his own computer as an analogy. He describes his own encounters with black boxes as follows:

> A black box is any actant so firmly established that we are able to take its interior for granted […] I am typing these words on a Macintosh PowerBook G4 laptop computer. There is a long history behind this particular machine, and numerous technical and marketing struggles were needed to establish personal computers as a familiar everyday product. The internal engineering of this device would be a complete mystery to me if I were to reflect on it, which happens only rarely. Yet it was just eight months ago that my previous computer (a black one, incidentally) began to erase my data without warning. In that case the former black box became a mysterious instrument of panic, like some evil demon of myth, ruining weeks or months of life as I slowly assessed which files had not survived the disaster. (Harman 2009, 33–34)

There is clearly nothing paranormal about Harman's "demonic" computer, but the experience is no less unsettling for it. Suddenly the familiar, cooperative device seems to have a mind of its own; even worse, it seems as though the device has committed a sort of betrayal, like a beloved pet biting its owner without warning. Black boxes are uncomfortable reminders of the instability inherent in the networks of objects and systems that we operate inside of without necessarily being conscious of them, until something goes wrong.

The transhumanist goal of separating consciousness from the body and preserving it after physical death, or of creating an ersatz digital version of the self via the accumulation of personal and social data, presents a similar black box problem. When these beings glitch, they expose their nonhuman, constructed nature. When they do not, they raise doubts about the privileged position of human consciousness. In 1985, Donna Haraway wrote in her foundational essay "A Manifesto for Cyborgs" that "[i]t is not clear who makes who and who is made in the relation

between human and machine […] There is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic" (1985, 220). Similarly, literary scholar Eugene Thacker writes in the first volume of his *Horror of Philosophy* series that "scientists estimate that ninety percent of the cells in the human body belong to non-human organisms […] Why shouldn't this also be the case for human thought as well?" Humans, after all, are vast assemblages of nonhuman beings. Narratives about our digital selves make this fact unnervingly clear. These constructed beings are liminal selves that exist in an uncomfortable twilight between human and nonhuman, conscious and inanimate.

4 Narrative Agency in Paul La Farge's *The Night Ocean*

Amateur digital narratives composed in interactive spaces like Reddit are especially fertile ground for sprawling stories that quite literally take on a life of their own, as readers add their own threads to the narrative loom. Yet as we will see, the echoes of the nonhuman or speculative turn are reverberating through literary fiction as well, where what might be described as a nonhuman sensibility is now emerging. Paul La Farge's 2017 novel *The Night Ocean* is one such text, and is notable for the way in which the agency of narrative itself is explored in detail. It is first and foremost a book about writing technologies and the people who try to control them. Specifically, it is a fictional account that also draws heavily from historical sources about H.P. Lovecraft's homosexual relationship with a much younger amateur science fiction writer. Although much more could be said about La Farge's masterful blending of fact, fiction and speculation, what is truly remarkable about the novel is the complexity of the narrative. The reader, the narrator, the supporting characters, and even Lovecraft himself, are subsumed by the uncanny agency of narrative. Unlike its postmodern predecessors, in which meta-narrative allows the author and reader maintain an ironic distance from the text, La Farge's novel implicates the reader in the narrative network.

La Farge's layered approach to storytelling is accomplished through the proliferation of patterns, a strategy that brings to mind Timothy Morton's concept of causal aesthetics introduced in *Realist Magic* (2013) and elaborated upon in *Dark Ecology* (2016). Morton argues that non-sentient beings express agency through the reproduction of patterns. In *Dark Ecology*, this argument is developed through several analogies: viruses are "nonliving patterned strands, truly foreign intelligences […] that force other patterned strands to go into a loop and become ciphers" (2016, 103); this not true just of viral reproduction, but also of "flowers, iridescent wings, Kantian beauty, tropes, earworms, and daft ideas" (2016, 104) – essentially all things aesthetic. This is because "they are symptoms of an irreducible gap between being and appearing that eats away at the metaphysics of presence from the inside" (2016, 104). Beauty and aesthetics are problematic to Kantian philosophy because "there's no way to know in advance what they are for […] All entities are narcissists insofar as they consist of weird loops of being and appearance" (2016, 104). Being and appearance are separated by an irreducible gap, and yet also paradoxically intertwined in a Gordian knot. This paradox is fundamental to Morton's ontology, which is also useful for understanding the layered narrative of La Farge's novel, which repeatedly loops back on itself; each time it seems as though all questions have been answers and all mysteries explained, La Farge exposes yet another possible truth, which ultimately resists interpretation.

La Farge's novel is told from the perspective of a woman, Marina, whose husband, Charlie, has vanished after becoming obsessed with exposing and publishing a book about Lovecraft's homosexuality and alleged relationship with Robert Barlow, who was a real life fan and fellow

science fiction writer who eventually became a noted professor of anthropology in Mexico City. Barlow later committed suicide after being blackmailed for his homosexuality. In LaFarge's novel, Charlie's book is revealed to have been based on fraudulent material given to him by a man named L.C. Spinks, and the subsequent backlash it unleashes destroys Charlie's life and sanity. Marina is not only trying to reconstruct the disaster that befell Charlie; she also doubts whether Charlie is, in fact, dead, as we are told at the beginning of the novel. No corpse is ever recovered from the lake he allegedly drowns in, and one day Marina receives a picture of a beach in a text message from a Daytona number that she strongly suspects was sent by Charlie, long after the date of his supposed death. While acknowledging that her lingering doubts about Charlie's death are probably unfounded, she nonetheless embarks on a journey retracing his steps, starting with his obsession with the life and work of H.P. Lovecraft. At issue initially is the authenticity of a book called the *Erotonomicon*, a secret tome in the vein of Lovecraft's *Necronomicon* that allegedly details, in code, the sexual exploits of Barlow and Lovecraft. *The Night Ocean* is far from the first novel with several narrative levels, or the first book within a book; what is notable is the way in which La Farge deploys this strategy in order to expose the instability of reality itself. What begins as a search for truth eventually becomes a search for a basis on which to establish truth, as Marina encounters one red herring after another. In other words, it is a narrative about the way in which narrative constructs and alters reality.

La Farge seamlessly blends fiction with historical fact; many of his characters were real people, as with the aforementioned Robert Barlow and, of course, Lovecraft himself. At times, it is easy to forget that the novel is fiction and not a biography or memoir, because so much of the story is based on fact. And yet, at other times, its status as fiction is unquestionable. Although some reviewers have emphasized that the novel, which like many of its contemporaries defies genre boundaries, does not contain any allusion to the supernatural, hints of unexplained spookiness nonetheless abound. Late in the novel, Marina discovers L.C. Spinks' preoccupation with a concept called the transmigration of souls – the belief that the spirit of a deceased person is capable of possessing or inhabiting the body of a living person. The following is an excerpt from Spinks' notes that Marina discovers in his home: "Drawn in against my will. Realize: *This is how transmigration works*. Words take you over. And you may inhabit others in the form of words" (La Farge 2017, 340, emphasis in original). Marina interjects, "What did Spinks mean […] Did he believe that books are souls, that writers live on in the bodies of their readers? It seemed like a very Lovecraftian idea of reading, to say the least. But on the other hand, I couldn't feel that he was entirely wrong" (La Farge 2017, 340). Spinks' motivation in creating the *Erotonomicon* and passing it off as a genuine artefact was a direct result of his bizarre belief that he had, in fact, become possessed by the spirit of Barlow (whom he had been impersonating prior to these events, claiming that he had not committed suicide and had in fact faked his death in Mexico City and fled to Canada) through the act of reading Barlow's diaries. Marina explains, "He felt Barlow's soul in him, urging him on. Writing the *Erotonomicon* hadn't been an exorcism, he realized. It had been an invitation" (La Farge 2017, 359). The word invitation suggests something like a curse, and indeed, everyone who comes into contact with the *Erotonomicon* seems to come to a disastrous end, including Charlie, who, like Barlow, may have taken his own life. She continues, "He tried on the name *Barlow* the way a transvestite might try on a stocking […] he demonstrated that with great love and hard work and enormous attention to detail it was possible to bring a human being back to life. It was a kind of reincarnation: an invitation to Barlow's soul to possess Spinks's living flesh once and for all" (La Farge 2017, 365, emphasis in original). As it later turns out, Spinks is actually a rather unhinged individual, and his motivations for impersonating Barlow were far from benevolent.

Marina's eventual discovery of Spinks's deception does not function as resolution or as explanation either. In fact, it merely adds another level of epistemological uncertainty to the plot. Marina discovers the extent of Spinks's deception when she finds a conveniently placed binder full of his notes in his home, after Spinks is suddenly taken ill. However, these notes are later revealed to be yet another fabrication, intended to portray Spinks as an overzealous fan desperate to do right by his hero. Marina discovers this second level of fabrication when she runs into a local historian and childhood acquaintance of Spinks named John Macfie, who reveals to Marina that Spinks' motivation was revenge of a decidedly ambiguous sort. Spinks's final words to Marina are "Hated them […] All of you […] Everyone in the world" (La Farge 2017, 373). Spinks is ultimately another black box, an inexplicable vessel of hate and rage. As Marina becomes more deeply invested in pulling back the narrative layers, it becomes apparent that despite the rational explanation for the uncanny events of the novel, Marina herself has invited in the same disaster that destroyed her husband, Barlow, and eventually Spinks. Despite the many false starts and red herrings in La Farge's novel, what is consistent throughout is that although a fabrication the *Erotonomicon* has a power and agency that always surpasses each narrative frame. In this way, La Farge suggests that books can function as proxies for the souls of their writers; like an ancient book that conjures a demon, the *Erotonomicon* unleashes itself on those who seek to harness its power, refusing to bend to human control.

La Farge's novel also explores the role of the Internet in narrative assemblages. Charlie's undoing is triggered by an Internet backlash over his book on the *Erotonomicon* – interestingly, a backlash that starts on Reddit, when a subreddit moderator tweets a link to a comment from a reader outraged that Charlie not only published a book based on a forgery, but in the process of doing so portrayed a relationship between a racist author and an underage teenaged boy in a sympathetic light. What then transpires is an Internet campaign against Charlie that ruins his career and marriage: "The righteousness of their activity was terrible, like watching a monster do therapy on its victim. But the things written by the unrighteous were worse […] I was glad, then, that Charlie and I had never returned to that conversation about having children […] I didn't want to bring new people into this world" (La Farge 2017, 221). Marina is frightened and horrified by the speed at which Charlie loses control over his own narrative and the fury of the mob aided by technology, "like the torchlight mobs of old, but enormous, shapeless, impossible to defend yourself against" – essentially, like a monster invented by Lovecraft (La Farge 2017, 222).

This many-tentacled beast is foreshadowed by one of Charlie's experiences early in the novel, reported second-hand by Marina. While doing research for his novel on Lovecraft and Barlow, Charlie visits the latter's former Florida home, where the two men allegedly began their sexual relationship. He spends approximately twenty minutes recording a video inside of the derelict building, only to discover that the video is only two and a half minutes long: "He wondered if part of it might be missing, and decided that fear must have distorted his sense of time. And yet: that night, when Charlie was typing his notes […] the cursor on the screen seemed to lag, as if it weren't just a pattern of electrically activated crystal dots, but an actual object, a tiny wall, which he was pushing through a resistant medium" (La Farge 2017, 84). Charlie then has a vision of Barlow in his hotel room, "shaking his head and whispering something, *No* or *Don't!* Then the cursor leaped forward and a string of mistyped letters appeared all at once on Charlie's screen. CHKL;WWN. Cthulhu? Curwen? The ghost, which had never been there, was gone" (La Farge 2017, 84, emphasis in original). While not precisely a supernatural experience, La Farge's novel often implies that communications technologies can function as conduits for nonhuman agency, and that narratives, whether real or fabricated, can be dangerous when transmitted through

electronic media. Not only do we lose control over narratives once they leave the safety of our minds, but narratives are also capable of doing things in the world that we neither expect nor intend.

The novel shares its name with yet another narrative, a short story co-written by the real Robert Barlow and H.P. Lovecraft. In this, an artist takes a solitary vacation to a beach resort and rents a cottage with a view of the ocean. It is not long before a series of mangled corpses begin washing up on the shore with regularity, bringing to the narrator's mind childhood stories of sea monsters dragging their human prey into the depths. Despite his sense of unease, the artist stays on at his cottage until the autumn, when one night he witnesses a strange figure emerging from the water. The story concludes with the following melancholy contemplation: "Silent, flabby things will toss and roll along empty shores, their sluggish life extinct […] Nothing shall be left, neither above nor below the somber waters. And until that last millennium, as after it, the sea will thunder and toss throughout the dismal night" (Lovecraft and Barlow 2013, 414). In *The Night Ocean*, this story is revealed as the alleged impetus for Spinks' fabrication of the *Erotonomicon*. In one of his notebooks, as discovered by Marina, he writes, "'The Night Ocean' pretends to be a story about how little we matter to a world that will go on without us but in fact I think it is about how without love we must despair. The creature in the ocean is Barlow, and the artist on the shore is HPL, looking bleakly at a world of delight which he fears to enter" (La Farge 2017, 348). The *Erotonomicon* is his way of resurrecting Barlow and reinventing history the way he believes it should have happened. For Spinks, this is not a mere retelling of history – he believes that the very act of publishing the book will create an alternative reality that allows his body to become the new husk for Barlow's spirit. Again, the extent to which Spinks, or for that matter the narrator, actually believes this to be true in a literal sense is ambiguous. But the conclusion of the novel is telling in this respect. Fuelled by her unshakeable suspicion that her husband might still be alive (just as Spinks temporarily 'resurrected' Barlow until his fabrications are exposed), Marina uncovers the truth about Spinks and Barlow. And yet, despite acknowledging its irrationality, she cannot let go of the hope that her husband did not end his life in a New England lake after all. After swimming out into the ocean, she contemplates Charlie's alleged suicide attempt and wonders,

> Who knew what might be down there […] A better world than the one he'd hitchhiked out of. I want to say that I was tempted to swim down and find it for myself, but not really. I'm too cautious, too hopeful, too bent on living. Still, it was peaceful in the ocean […] and I might have floated there for a long time if two things hadn't happened simultaneously: my leg brushed a jellyfish and lit up with pain, and I saw someone on the beach, waving his arms, shouting in a familiar voice, calling my name (La Farge 2017, 385).

This ending is, in some respects, a stubborn refusal on the author's part to clearly establish the genre of the novel. Is this a ghost story? Is this the story of a woman who finally comes to terms with her estranged spouse's death? Is this a reunion, or does this abrupt ending represent a new chapter in which she will move forward with her life?

It is precisely this suspension of knowledge or understanding that simultaneously exposes the instability of reality and the nonhuman agency of texts. Marina's revelation, whatever it may be, is yet another layer of narrative repetition, the perspective of the artist in "The Night Ocean" portrayed in reverse. The *Erotonomicon* is not just a book detailing the illicit relationship between Barlow and Lovecraft – it is a viral agent of pattern reproduction, turning the lives of the people who read it into ciphers. If *The Night Ocean* can be called a horror novel, this is where the horror

lies – not in the human generation of narrative, but rather in narrative's nonhuman agency that is forever exceeding its human authors, surpassing their abilities to control or even to interpret it. Of course the trope of the book that drives the reader to insanity is itself nothing new – Lovecraft was himself preoccupied with the idea, and it appears subsequently in science fiction and horror throughout the 20th century. Nonetheless, contemporary literary horror, both professional and amateur, displays a preoccupation with the notion of nonhuman causality, the agents of which strike at our most intimate fears about our place in the world. La Farge's madness-producing book is nothing mystical; in fact, it is embarrassingly prosaic. Therein lies the true horror.

5 Conclusion

Like "My dead girlfriend" and "Be Right Back", *The Night Ocean* is a story about grieving and the possibility of return – not precisely life after death, but some sort of post-mortem persistence, and both stories posit that persistence via technological intervention. There are also echoes of Rothblatt's ideology in the novel, specifically in the fact that return from the dead does not have to constitute a phenomenological continuity with the living – it is instead a narrative reconstruction. Spinks "becomes" Barlow by allowing Barlow's narrative to "possess" him, in the same sense that Bina48 is not the same conscious being as Bina, but rather a computer simulation "possessed" by Bina's data. This serves to lay bare the uncomfortable truth that we are not unified beings; we are instead assemblages of many narratives, some of which may one day be able to act independently. The worst case scenario of AI is nothing as dramatic as the vision offered by cyberpunk science fiction, but rather a quiet multiplication of the self in the form of disembodied data. This is the anxiety that narratives like "Be Right Back" and "My dead girlfriend" make explicit.

We have always been nostalgic for the past and fretted over change, but the age we live in is one of unprecedented devastation on a global scale. The instability of our individual lives is reflected back at us in the precarity of the stories we tell about ourselves. The narratives explored in this essay expose the fundamental instability of narrative, and by corollary, of our own selves. If there is any case to be made for insisting on genre distinctions in this age of unprecedented genre hybridity, perhaps speculative fiction is one such distinction worth preserving for the simple reason that it offers heuristic tools for grappling with the more uncomfortable aspects of the march of technological progress. On these grounds, there is also a strong argument to be made for more scholarly engagement with non-traditional narratives, like the creepypasta detailed in this essay. What digital narratives do that traditionally published texts do not is provide an interactive space for readers and authors to explore the limits of the possible and the knowable. On the more prosaic side, they can help us confront troubling questions, such as what form should death practices take when we will all persist in the digital afterlife, whether we want to or not? How do we define death, or for that matter life, when so much of who we are is distributed in nonhuman networks? Who, or what, will remain to tell our stories when we have long since shuffled off this mortal coil?

Unfortunately, natesw cannot offer us any answers. The handle never posted again after the conclusion of his creepypasta, and the account has not been used since.

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Gaiman, Banks and Miéville – Hybrid Space and Genre

ABSTRACT

The analysis of three recent British novels: Neil Gaiman's *Neverwhere* (1996), Iain Banks' *Transition* (2009) and China Miéville's *The City & the City* (2009) strives to uncover structural parallelisms and the inherent evolution in their development, plot structuring and presentation. It is centred on the exhibited relation to the structure and general mechanics of space. The interpretations of space are based on Foucault's heterotopias, the rhizome of Deleuze and Guattari, and de Certeau's absent space, which show how the active force of space and the complexity of the genre identity are interconnected, and how they interact with the social and political engagement of the works and their wider cultural and social context. These seminal works of the British Boom provide a rich source material for an outline of the process of interplay of genre identity and political engagement, and an overview of how this interplay affects their plot, style and the protagonists.

Keywords: genre hybridity; space; science fiction; fantasy; political engagement

Gaiman, Banks in Miéville – hibridni prostor in žanr

POVZETEK

Analiza treh sodobnih britanskih romanov: *Neverwhere* (1996) Neila Gaimana, *Transition* (2009) Iaina Banksa in *The City & the City* (2009) Chine Miévilla razkriva povezave med pripovedno in žanrsko strukturo romanov ter strukturo in mehaniko ideje prostora. Interpretacija literarnega odnosa do prostora črpa iz Foucaultove ideje heterotopij, iz rizoma Deleuza in Guattarija ter de Certeaujevega odsotnega prostora. Izkaže se, da je kompleksnost žanrske identitete teh treh literarnih del neločljivo povezana s silnicami prostora, kar pa se navezuje tudi na družbeno in politično angažiranost romanov ter širši kulturni in družbeni kontekst. Ključni romani gibanja British Boom ponujajo bogat vir, s pomočjo katerega je orisan proces medsebojnega učinkovanja prostora, žanrske identitete in politične angažiranosti, ki posredno vpliva tudi na zgodbo, slog in protagoniste.

Ključne besede: hibridnost žanra; prostor; znanstvena fantastika; fantastika; politični angažma

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Gaiman, Banks and Miéville – Hybrid Space and Genre

1 Introduction

The idea of space in postmodernity is not defined only geographically and psychologically; it is also applicable to the system of literary theory, as the texts are also spaces just as space is intrinsic to art and language. Since textual complexity can be comparable to spatial complexity, theory has to rely on terminology that can emphasise the layers and subtleties involved in something as intricate as describing texts as a form of space.

As far as the terminology of space is concerned, there is a common ground in Foucault's heterotopias, rhizome of Deleuze and Guattari, and de Certeau's absent space. They all lack depth and bear the sign of surface-focus and ahistoricity. They all try to encompass the idea of postmodern space and take into account its expanse and internal structure. And they can be applied to the study of three British novels that show some significant common ground already with the idea of space present in the titles themselves, but exhibit an even more significant connection in their relationships with space, with genre and with political engagement. Interestingly, the three works very similarly take significant care to evade the limiting boundaries of a single genre, but show a much diversified attitude to the hybridity of space, as we will demonstrate. What is more, this diversified attitude in all three cases directly addresses the political and social events current at the time of publication of the works, therefore further reinforcing their openly political agenda. In this way, the specific relationship with space, evasion of genre boundaries, and directly political content are interlinked and offer a unique opportunity for the exploration of the mechanism of their connection.

To explore these relationships, we shall observe in broad strokes how in the process of development of the novel, the structuring of the plot and the presentation of the setting in each of the three cases, the number of spaces involved rises and the role of the space in the workings of each novel changes. At the same time, there seems to be a direct relationship between the role of space, the active force of space and the complexity of the genre identity of the work.

We shall investigate each of the novels and try to determine their inherent attitudes toward space as well as the generalities and specifics of the three authors and their more or less overt relationships with contemporary world and politics.

Genre-wise we shall observe the evolution of a rather straight-forward urban fantasy with a strong inherent social component in Neil Gaiman's *Neverwhere* (1996), which operates on the premise of a rather simplistic division of space and fantastic invisibility or *erasing*. We shall continue with the evolved hybrid genre of the 21st century's science fiction, which glides toward the rhizomatic, labyrinthine space conceptualised by Iain Banks in *Transition* (2009), with its *forgetting* protagonist hidden in plain sight, and the *tour de force* by China Miéville in his novel *The City & the City,* where fantasy and detective novel parade a surprising sci-fi/dystopian novum of the institutionalised practice of *unseeing*.

2 *Neverwhere*

Richard Mayhew is a semi-successful young man with a regular, boring job but a very beautiful, ambitious girlfriend who only cares about succeeding in contemporary, money-driven London.

One evening he notices a young girl in curious attire bleeding on the sidewalk. His girlfriend, a typical representative of the ruling strata in the post-Thatcher era, wants to ignore the situation:

> "Jessica?" He could not believe that she was simply ignoring the figure at their feet.
> "What?" She was not pleased to be jerked out of her reverie.
> "Look."
> He pointed to the sidewalk. The person was face down, and enveloped in bulky clothes; Jessica took his arm and tugged him toward her. "Oh. I see. If you pay them any attention, Richard, they'll walk all over you. They all have homes, really. Once she's slept it off, I'm sure she'll be fine." (Gaiman 1998, 17)

Nevertheless, Richard helps the girl and brings her home. In the morning, the girl is gone and Richard Mayhew becomes invisible, he has been aggressively erased from his London, or, as he later learns, from London Above. His bank cards are not working, his apartment has been, without his permission, rented out to strangers. He is forced to find refuge in the London Below, which exists in a maze of sewer canals and abandoned subway stations. Richard is forced to literally fall through the cracks to *Neverwhere*: "Young man […], understand this: there are two Londons. There's London Above – that's where you lived – and then there's London Below – the Underside – inhabited by the people who fell through the cracks in the world. Now you're one of them. Good night" (Gaiman 1998, 82).

The girl (aptly called Door) whom the protagonist rescued in London Above wants to discover why her family was killed and at the same time wants to save the underworld kingdom of London Below from the evil that wants to destroy it. Since Richard Mayhew has nowhere to go he joins her quest, and at the end, after successfully returning to London Above, realises that he cannot live there any longer.

The story of *Neverwhere* is set in the London of the 1990's, a society which is still reeling after three consecutive terms of the Iron Lady, during which the government started the process of changing British industry and privatised many state-owned enterprises. In 1986, the number of people living below the official poverty line increased to almost 12 million. There were very high unemployment rates, drastic cuts were made to health care, and the number of homeless people grew. In London, close to Waterloo Station, there even appeared the so-called Cardboard City, which provided home to hundreds of people.

Neverwhere is the result of Thatcher's Britain, and its socio-political agenda is obvious. The segregation of those who have the means and those who do not was blatant and scarred the nation. The duality of the rich and poor is reflected in the duality of the two Londons, which are home to two separate groups of people, who in turn belong to two worlds: the world of the Past – fantastical, menacing, violent but energetic London Below, and the world of the Now – a dreary, bleak world of covert surveillance and dominance.

This clear division is in accordance with Michel Foucault's understanding of heterotopias. When defining the difference between the new and the old models of dominance in *Discipline and Punish* and *The History of Sexuality*, Foucault draws an impressive series of analyses, thereby drawing a picture of the new power that in Neil Gaiman's work comes to the fore in London Above. He expands on the idea of the difference between the ways of realising authority, domination and punishment "before" and "now".

London Below is an example of the old power, concentrated on the public space and public authority, which put its subjects into an extremely minimised, less visible position. It scared the population into submission through very visible, frightening ways of punishment (public executions), which from the modern perspective seem completely out of touch with our current humanitarianism (Foucault, 1997). The new power, however, abolishes the idea of public space. The power is hidden and all of the subjects are now under scrutiny. Surveillance data banks can be easily checked by authorities whose mode of operation is hidden, but strongly implied, as is the case in *Neverwhere.* The novel was written before the eruption of the various invasion of privacy scandals after 2001, which was particularly significant in Great Britain. The novel therefore resides in a Foucauldian heterotopia, the first principle of which maintains

> that there is probably not a single culture in the world that fails to constitute heterotopias. That is a constant of every human group. But the heterotopias obviously take quite varied forms, and perhaps no one absolutely universal form of heterotopia would be found. We can however class them in two main categories. In the so-called primitive societies, there is a certain form of heterotopia that I would call crisis heterotopias, i.e., there are privileged or sacred forbidden places, reserved for individuals who are, in relation to society and to the humane environment in which they live, in a state of crisis. (Foucault 1986, 25)

The image for such a society is Jeremy Bentham's panopticon (Foucault 1997) where one vantage point enables the surveillance of many prisoners who do not have the possibility to see or experience their watcher. Where ancient societies attempted to make a few things visible to the many, modern societies strive to make many things visible to the few.

The new mode of punishment is not, as it might initially seem, inspired by humanitarianism, but by the need to control. Humanitarianism itself seems to be just a cover story for a new growing mode of control. People are measured and probed in various ways until they are remade into better subjects of control. The modern individual is now an object of control – the examined and categorised subject who becomes the target of policies of normalization. A case in point is the fate of Richard who, as a target of such a policy of normalisation, loses his job, identity and social status. As Foucault argues, the transition in the mode of punishment from physical torture to more modern, gentler methods is a development in the history of punitive systems (Foucault 1997).

But there is rebellion brewing somewhere below, somewhere it can hide, where it can plan the attack, in the Neverwhere of London Below. Neil Gaiman does not shy away from the optimistic belief that things can be changed and that there is room for improvement if the Establishment is tackled in a well-planned manner. The female protagonist is able to open doors, and the idea of opening doors relays the idea of opening up the space, freeing the world, breaking boundaries. As such, all the inhabitants of the London Below have names that are connected to passages, transitional spaces, doors, implying in a certain sense that there is a way out, that there is a possibility of equality and freedom and breaking out of the oppressive world of closed, punishing limitations of space.

What Gaiman does brilliantly is take on the whole concept of the multiverse (here limited to dual-verse) usually found in science fiction. He cleverly juxtaposes the idea of the duality of two worlds existing simultaneously, the world of the bluntly oppressing *real* and that of the mysteriously dangerous *fantastical.* With the falling through the cracks there is a transition into the world of fantasy, mystery, magic, and danger. The fact that Gaiman later won numerous science fiction awards, such as the Nebula and Hugo, clearly demonstrates his ability to open up

his preferred genre of fantasy. And in this way he offers his readers and protagonist a possibility of change and maybe, ultimately, the possibility of a life that is free from constraints of the emerging world. But 13 years later, when *Transition* and *The City & the City* appeared, the situation seems more complex, more hybrid and much less optimistic.

3 *Transition*

The fast-paced 2009 novel by Iain Banks comprises a number of different narratives, none of which progresses in chronological order: it is a story of rebellion, of a group of renegades – secret agents hopping through dimensions, worlds and times – who dare to attack a devious institution called the Concern or L'Expédience, which manipulates the whole multiverse. As it turns out, the Earth exists in a plethora of possible other Earths, which can be accessed by individuals who have the rare special ability of transitioning, and are able to procure a transition-enabling drug called septus, produced only by the Concern on only one of the variants of Earth called Calbefraques. The Concern trains its special agents in the art of transitioning between worlds and, of course, time, in order to change events across the multiverse. Sometimes this means saving a person from certain death or explosion, but at other times it means assassinating people, which, in fact, is the occupation of the novel's protagonist, agent of the Concern and assassin Temudjin Oh. Like Richard Mayhew of *Neverwhere*, Oh is caught somewhere in-between the worlds, but he is also caught in-between the rebellious Mrs Mulverhill and the chief operative of the Concern, Madame d'Ortolan, who is the head of the Concern's Central Council and runs the organisation.

To move between dimensions, an agent must jump into the body of a person residing in the destination one. This means that Temudjin is literally jumping from perspective to perspective as he is transitioning through a number of possible worlds. Thus, the novel offers an abundance of different perspectives that the reader needs to follow and jump into. From one person's mind to another, and from one Earth to an alternate one, we get to see more and more pieces of the puzzle: on one of the Earths Mandarin is the dominant language, on others, English.

Some Earths were destroyed by gamma rays, on other Earths humans never even evolved. For this reason, when discussing *Transition*, the idea of the rhizome seems the most appropriate, as it is all-encompassing and a model of culture which does not want to obey any organisational structure, at the same time comprising the highest number of definitions and variants:

> Contrary to a deeply rooted belief, the book is not an image of the world. It forms a rhizome with the world, there is an aparallel evolution of the book and the world; the book assures the deterritorialization of the world, but the world effects a reterritorialization of the book, which in turn deterritorializes itself in the world. (Deleuze and Guattari 1983, 383)

In this sense the rhizome displays culture or history or both as a map, as a varied palette which does not reveal any origin. The rhizome resists any organisation and therefore offers no tangible chronology, as it "has no beginning or end; it is always in the middle, between things, interbeing, intermezzo" (Deleuze and Guattari 1983, 385).

Implicit in this statement is that a rhizome connects everything with anything. In a rhizome, no rules need apply. It represents a system which is without an obvious centre, where no hierarchy applies and, most importantly, where the binary relationship between what is *in* and what is *out* no longer exists (Deleuze and Guattari, 1983). This lost binarity, the random connection of the great outside and the limited inside, is what defines *Transition.* The numerous instances of random

intrusions of different characters, different media, or random appearances of the protagonist in various guises are what define this novel as well as the novelistic structuring of space.[1]

The idea of the rhizome is not the only spatial theory that is applicable here. Whereas in the instance of *Neverwhere* we were under the influence of the first principle of Foucauldian heterotopias, in *Transition* the relevant principle is the sixth:

> The last trait of heterotopias is that they have a function in relation to all the space that remains. This function unfolds between two extreme poles. Either their role is to create a space of illusion that exposes every real space, all the sites inside of which human life is partitioned, as still more illusory (perhaps that is the role that was played by those famous brothels of which we are now deprived). Or else, on the contrary, their role is to create a space that is other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled. (Foucault 1986)

Transition is in fact a novel about what happened to Europe – or, more generally, the Earth – in the period between the fall of the Berlin Wall and the fall of the Twin Towers, and what those twenty years did to society. The most blatant consequence is arguably the War on Terror which encroached upon human and civil rights and marked the beginning of the end of personal privacy and freedom. Although *Transition* is an intensely political novel, and its author an intensely and publicly political man, it is not about party politics and it transcends the political reality of Great Britain. The aim is broader and deeper. Indeed, the novel makes rebellion and attack on the establishment more aggressive and more open, but at the same time more fragmented, less efficient. There is also an additional political and social moment that is only slightly hinted at in the duality of Gaiman's *Neverwhere* and represented in its mythical monsters of the London Below, namely the emerging existence of the Other. The stranger, foreigner, the opposition as understood and explained by Zygmunt Bauman:

> In dichotomies crucial for the practice and the vision of the social order, the differentiating power hides as a rule behind one of the members of the opposition. The second member is but the other of the first, the opposite (degraded, suppressed, exiled) side of the first and its creation. Thus abnormality is the other of the norm, deviation the other of law-abiding, illness the other of health, barbarity the other of civilisation, animal the other of the human, woman the other of man, stranger the other of the native, enemy the other of friend, 'them' **the other** of 'us', insanity the other of reason, foreigner the other of the state subject, but the dependence is not symmetrical. The second side depends on the first for its contrived and enforced isolation. The first depends on the second for its self-assertion. (Bauman 1991, 14)

Groups typically define themselves in relation to others, as identity does not really mean a lot without the "other". Identity does not usually get defined for its own sake. In *Neverwhere,* the diversification is already taking place in the simple duality of poor vs. rich, adapted vs. non-adapted. But in *Transition*, Banks goes one step further in introducing a very contemporary

[1] Interestingly, a very similar situation can later be observed in the works not associated with genre writing. In her study of literary worlds in Ruth Ozeki's *A Tale for the Time Being* from the perspective of the postmodern paradigm shift, Mojca Krevel argues that the relationship between the reading worlds of the main protagonists is the relationship between the book and the world: their coding is the same, which allows for their interconnectivity, exchangeability and equality (Krevel 2016, 179). The same principle holds true for Concern's agents and assassins, as in *Transition*, different worlds and events that are encoded in those worlds also function as "knots in a multidimensional rhizome where different realities of these worlds and events connect and are enmeshed in the exact place where the information on their existence is compatible" (Krevel 2016, 179).

otherness based on religion, race and gender. These definitions of self and others are inextricably linked rewards and punishment, material or symbolic.

Considering all the variables that affect the plot of *Transition*, defining the genre grows rather complicated. The author himself was known for splitting his persona into genre and non-genre selves. He published mainstream fiction as Iain Banks and science-fiction as Iain M. Banks, including the initial of his middle name, Menzies. In the UK, *Transition* was not published as an Iain M. Banks novel, but appeared as such in the USA, implying it belongs to the science fiction genre. The reasons were probably bipartite: firstly, the ideas of a multiverse and bodies as vessels of transition superficially seem very science-fictional, and secondly, in the USA Bank's science-fiction is better known and better received. But, as far as the plot is concerned, the mere number of spaces, which by far exceed the simple duality of *Neverwhere,* and the complex political and social dimensions of the temporal paradigm of the post-millennial era, result in a hybrid genre that is only partially (if ever) science fiction, and which entails strong elements of fantasy and psychological thriller.

This, in fact, seems rather symptomatic of the era, since both this novel and Miéville's *The City & the City* – which we are discussing next – were published in 2009 by authors who are poster children of the British Boom movement in science fiction and fantasy. The two novels are a commentary on the political context in Britain at the time. In contrast to mainstream production, genre fictions were largely ignored by the reigning powers, and so were able to establish themselves as vehicles of radical critique and rebellion against the system. The rebellion included breaking out of the limitation of the genre as well. As Luckhurst muses:

> My contention would be that the genres undergoing inventive hybridization and regenerative "implosion" – Gothic, sf, and fantasy – experienced such a revitalization in the 1990s because they could still find spaces outside the general de-differentiation or "mainstreaming" effect sought by the strategy of cultural governance. The low value accorded to the Gothic-sf-fantasy continuum allowed these genres to flourish largely below the radar of a cultural establishment often complicit, in complex ways, with the new methods of governance. (Luckhurst 2003, 423)

4 *The City & the City*

Beszél and Ul Qoma are two cities that occupy the same place. Spatially, they are indivisible but at the same time there is an intentional invisible border that divides them. This separation is guarded by most inhabitants, although there are nationalists in each city who believe that the whole place should be one metropolis at the expense of the other, and unificationists who think that they should merge. The divide is guarded by something rather undefined, called the Breach. Nobody knows what or who the Breach is. The only thing that is clear is that it does not interfere with the actions of the citizens unless they either see the other city or unlawfully cross over. Nobody really knows what happens with the offenders, but they are never to be seen again. That is why everybody is extremely careful and the residents have been taught to see and unsee things around them. Some areas of the city are *total*, which means that they belong in only one city, while some of them are *crosshatched*[2] so that a street or a house might be both in Beszél and in Ul Qoma.

[2] A term introduced by John Clute in 1997 to describe places where the demarcation line between realities or worlds is not clean and clear-cut, or where two or more worlds may simultaneously inhabit the same territory: "when borderland conventions are absent, there is an inherent and threatening instability (wrongness) to regions of crosshatch; a sense of imminent Metamorphosis" (Clute and Grant 1997, 237).

The central character of the novel is Tyador Borlú, an Inspector for Beszél's Extreme Crime Squad. He has to solve the murder of a young American archaeology student who was part of a team excavating a *precursor* site – a site from the period before the *cleavage* of the two cities. The plot thickens when the detective discovers that the victim was in fact not murdered in Borlú's hometown Beszél, but may have been killed in Ul Qoma. Borlú learns that the dead girl was, in fact, a resident of Ul Qoma, and it appears that the murder might be a case of breach, which would mean that the responsibility for finding the killer could be delegated to the mysterious forces of Breach. But things become more complicated, as "breach" is denied and it becomes clear that one of the victim's particular interests was a theory maintaining that there is a third, invisible city occupying the same area as Beszél and Ul Qoma, a city between the cities called Orciny. The novel ends in a gloomy, pessimistic way: nothing is resolved, everyone resumes their lives, and the only change happens in Borlú. The actual murderer, the Canadian scholar Bowden, tries to escape by placing himself in the same position as the Breach:

> He would be in Breach, which, unbelievably, he was not yet. He walked with equipoise, possibly in either city. Schrödinger's pedestrian […] He did not drift but strode with pathological neutrality away from the cities' centres, ultimately to borders and the mountains and out to the rest of the continent. (Miéville 2009, 295–96)

Bowden sets up a life on the borderline and provides Tyador with a model for how to understand his own role as part of the Breach: "I was learning from him how to walk between them, first in one, then the other, or in either, but without the ostentation of Bowden's extraordinary motion – a more covert equivocation" (Miéville 2009, 308). The novel ends with Borlús' words: "I live in the interstice yes, but I live in both the city and the city" (Miéville 2009, 312).

The fragmented and multi-layered space of Miéville's novel seems to be close to de Certeau, who builds on Foucault's heterotopias, and adds the distinction between place and space, where a place (*lieu*) is the order with which elements are distributed in relationships of coexistence. That excludes the possibility of two things being in the same location (place). The elements taken into consideration are beside one another, each situated in its own "proper" and distinct location, which implies an indication of stability.

A space, however, exists when one takes into consideration direction, velocities, and time variables, which means that space is composed of intersections of mobile elements. Space occurs as the effect produced by the operations that orient it, situate it and temporalise it. Space is a practised place. A street, which is geometrically defined by urban planning, is transformed into a space by walkers. In the same way, an act of reading is the space produced by the practice of a particular place: a written text, i.e., a place constituted by a system of signs (de Certeau 1984, 118–20).

This corresponds to the structure and workings of the two cities in Miéville's novel, of the strict location and superimposition of something additional, which can be realised only by the involvement of participants, in this case the inhabitants who actively maintain the status quo. De Certeau even subverted the originality of alternative space, and foresaw an absent space as the space of the Other, and the space where neither the territory of the Other nor of the self becomes absolute. With its sympathy for the Other, the absent space sought by de Certeau is a complementary space serving as an antidote to revolutionary rationalism impregnated with scientific positivism. For de Certeau, absent space encompasses an ethical turning which reflects on Otherness (Jang 2015, 100). Hence, in accordance with Miéville's concept of space, the role of the Other in contemporary society, as depicted in *The City & The City*, is intensified and

diversified. There is an insurmountable abyss between the conformist society of the majority, and the minority of the Other. At the same time, in the era of increased surveillance, war on terror and minimised private freedom, the idea of rebellion is completely perverted.

Rare instances of subversion do exist in the novel, but in general, people start to self-regulate. Instead of revolting against the establishment, the citizens of Beszél and Ul Qoma, fearing the unknown force of oppression, the invisible secret police, and the omnipresent terror, instead control themselves and do not want to move away from the status quo imposed upon them by the scary, Foucauldian forces of discipline and punishment. Or, as Borlú himself says: "My task is changed: not to uphold the law, or another law, but to maintain the skin that keeps law in place. Two laws in two places, in fact" (Miéville2009, 373).

This pessimism can be seen as part of the shift from the pre-millennial hope for a new century to a realisation that in the post 9/11 era nothing is going to – and indeed cannot – change.

Miéville's engagement with questions of genre has been complex and interesting. Characterising his writing as "New Weird", he is an ardent fan of weird fiction, especially the works of Mervyn Peake and H. P. Lovecraft. He has also stated that he would like to write a novel in every genre (Pistelli and van Worden 2005). When discussing the delineation between fantasy and science fiction, he clearly showed that the demarcation between them is too fuzzy to be maintained. As Miéville explains:

> What they share is as important as what distinguishes them. What they share is the starting point that something impossible is true. Whether it is not possible because it is not yet possible or whether it may never become possible, this starting point of radical alienation from actuality is the fantastic moment that both 'science fiction' and 'fantasy' share. […] What unites the genre of fantasy/Gothic and the genre of the science fiction is that they literalize their metaphors. (Shapiro 2008, 64)

He openly criticises the theories of the fantastic of the post-Tolkien works which, in his opinion, offer only a simplistic reading of the genre, and thus cater only to the demands of the market. He strongly opposes such a delineation of the genre at the expense of the specificities of artistic form. Or, as he explains, no one would ever dream of denigrating Kafka on these grounds, no matter how well he sells, while they might otherwise in the case of a story in which a character wakes up and discovers that by magic he has turned into giant cockroach. He wonders what distinguishes Kafka's use of the fantastic from Tolkien's (Shapiro 2008, 64-65). He clearly refuses to accept any limitations of a specific genre and demands complete freedom of expression. We could even argue that the freedom of literary expression which he demands and the number of genres which he freely exploits in *The City & the City* are closely connected to the complexity of the space dimension, and in contrast with the limited freedom and sovereignty of the characters in the novel.

5 Conclusion

We have observed Neil Gaiman, China Miéville and Iain Banks navigate through genres and seen how genre diversification is closely connected to the authors' relationships to space, which, moreover, seems to influence the explicitly political content of their novels. Neil Gaiman in *Neverwhere,* which is set in the pre-millennial Britain, uses a rather simple duality of space with London Below and London Above, through which he illuminates the increasingly aggressive bipartite British society of the post-Thatcher era. The first principle of Foucault's heterotopias is

the defining moment of control in this case and division, where the idea of borders and boundaries are only just emerging. Gaiman is therefore able to stay in his preferred milieu of just one genre – fantasy with urban elements – and exercise a rather pronounced political commentary. The plot still offers the protagonists an opportunity to exert their free will. Some transition between social classes is still possible, and the idea of the "dangerous" Other is only vaguely implied.

The two other works are of a later date, when the consequences of the aftermath of September 11 are extremely palpable and the optimism of the end of the 20th century has evaporated. Iain Banks' *Transition* is set just after "the golden age between the fall of the wall and the fall of the towers" (Banks 2009, 2). The novel explores the ways in which selfishness and corporate greed create and maintain the boundaries which are closing in on every individual. Banks introduces and problemises *otherness* based on religion, race and gender. Foucauldian rewards and punishments operate in a multiverse, a fragmented space, and are closely connected to fragmented definitions of self. The idea of the rhizome seems the most all-encompassing, as it is a model of culture which does not want to obey any organisational structure, and comprises the highest number of definitions and variants. The novel makes the rebellion and attack on the establishment more aggressive and more open, but at the same time it is more fragmented and less efficient, which leaves the protagonists defeated and the establishment unscathed. The genre follows the idea of fragmented space; it is multifaceted, unapologetically open and diverse.

China Miéville's *The City & the City* insists on "unseeing" those on the other side of the political, economic and physical boundaries imposed by the hidden establishment whose machinery of surveillance and punishment is already in the zone of the fantastic and magical. The space is not as fragmented as it is in *Transition*, but more elaborate. Space very efficiently underscores the idea of otherness and oppression. The concept of space follows de Certeau's distinction between place and space, and focuses on the idea of absent space as the space of Other. Miéville's protagonists almost give up on fighting the institution and are ready to self-regulate, they give up freedom voluntarily. The idea of an oppressive "magical" apparatus is enough to keep them at bay. Miéville as the author, on the other hand, very vocally defends his right to free expression and multifaceted genre works, and is not ready to succumb to the wishes of the market.

All three authors are critically acclaimed and at the same time immensely popular key players in the very vibrant British Boom movement. Their politically engaged and boundary-crossing narratives express ways in which popular culture (literature) can react to the challenges of ever more oppressive, hidden, but at the same time omnipresent, forces of surveillance and terror.

In this paper we explored how these reactions vary according to the relationship that the author and his work are willing to express towards their society, and how much political engagement they have encoded in the structure of the relationships and the nature of the literary world, and thus of the text itself. It has become evident that these structures correspond to the postmodern idea of space, to the relationship of place and space in the context of textuality. As the degree of engagement increases, so does the textual complexity and its corresponding spatial complexity. And, as we explore the structuring of the plot and presentation of the setting in the three novels, we discover how the number of spaces, the role of the space and the relationship between the protagonist and the space intensify. We have shown how the relationship between the role of space as a force of action in the novels corresponds to the complexity and fluidity of the genre identity of the work, the degree of encoded political agenda and criticism of contemporary reality, but also to the nature of the protagonists and their involvement in the working of the space and the mechanics that governs it within the work itself.

This progression scales out: from a protagonist whose personal engagement propels him through the membrane that separates the duality of his Foucauldian heterotopia and enables him to identify as a hero, to pierce the boundary in both directions and to, in the end, choose his own preferred reality, identity and genre, through a rebellious and revolutionary anti-hero who, while transitioning through a fragmented multiverse, is fragmenting himself and is becoming frugal and accidental. Through his shifts of perspective and memory the protagonist is in fact melding with the rhizomatic centre-less structure of the world he is trying to rebel against: a world we can chose to comprehend as fantastic, science-fictional or very real. And, finally, with *The City & the City*, the novel progresses to the final stage of textuality which overlays multiple places, spaces, genres and perceptions without ever fully anchoring itself to any reality, except the one which comes forward through the viewpoint of the protagonist, whose self-censoring, self-governing quest for truth and resolution guides him through self-deception, self-regulation and the ultimate unseeing. There he eschews any desire to pierce the veil or reach for the hidden reality, and instead resolves his quest for the truth by becoming a part of the membrane himself. He becomes one with the veil and the oppressive force that enforces and regulates the separation of the self and Other.

In this progression, the relationships of the society and the individual, the space and the structure, the attitude towards genre identity and political engagement, show a clear pattern that most strongly expresses itself in the hybridity of space, which is the nucleus of all three novels.

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Dystopias Go Global: The Transnational Reorganization of Territories and Societies in *Elysium*

ABSTRACT

This article argues that at the turn of the twenty-first century science fiction (SF) cinema has begun to show particular interest in transnational interactions and cosmopolitan concerns. The article focuses on one of the most representative groups of this trend: dystopias that explore the transnational systems that shape deeply unequal societies. The first part of the article provides an overview of the different transnational issues that contemporary dystopias deal with. The article then presents the film *Elysium* (Neill Blomkamp, 2013) as a representative example of this trend. The analysis of *Elysium* sheds light on several socioeconomic and territorial processes that are shaping the development of neoliberal globalization in the twenty-first century: extraterritorial operations, market incorporation, and the reorganization and superposition of borders. The article concludes that *Elysium* and similar films at first appear to criticize a set of structures and practices that prevent large numbers of people from living in decent conditions, but eventually reproduce the same circumstances and hierarchies that they appear to denounce.

Keywords: science fiction film; globalization; cosmopolitanism; territory; borders; welfare; markets

Globalizacija distopij: transnacionalna reorganizacija ozemlja in družb v filmu *Elizij*

POVZETEK

Članek obravnava trend, ki pomembno zaznamuje znanstvenofantastično filmsko produkcijo zadnjih let, in sicer izrazito zanimanje za transnacionalne interakcije in kozmopolitsko problematiko. Študija se osredotoča na distopije, ki raziskujejo transnacionalne sisteme, odgovorne za oblikovanje skrajno neenakopravnih družb, kot eno najbolj reprezentativnih skupin tega trenda. Prvi del članka ponuja pregled različnih transnacionalnih problematik, ki jih obravnavajo sodobne filmske distopije. Sledi predstavitev filma *Elizij* (Neill Blomkamp, 2013) kot značilnega predstavnika tega trenda. Analiza filma *Elizij* osvetli številne socio-ekonomske in ozemeljske procese, ki usmerjajo razvoj neoliberalne globalizacije v 21. stoletju: ekstrateritorialne operacije, inkorporacije trgov ter reorganizacija in superpozicioniranje meja. Članek zaključuje ugotovitev, da čeprav *Elizij* in podobni filmi na prvi pogled kritizirajo strukture in prakse, ki večini človeštva onemogočajo solidne življenjske pogoje, se prej ko slej izkaže, da ti filmi reproducirajo pogoje in hierarhične ureditve, kot so tisti, ki jih na videz zavračajo.

Ključne besede: dobrobit; globalizacija; kozmopolizem; meje; ozemlje; trgi; znanstvenofantastični film

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Dystopias Go Global: The Transnational Reorganization of Territories and Societies in *Elysium*

1 Introduction

Dystopias have always worked as social thermometers of their time. They project grim visions of alternative (often futuristic) spaces and times to address contemporary concerns. For example, *Alphaville* (Jean-Luc Godard, 1965), *Blade Runner* (Ridley Scott, 1982), and *The Terminator* (James Cameron, 1984) register anxieties over the development of technology, computers and artificial intelligence; *Soylent Green* (Richard Fleischer, 1973) and *They Live* (John Carpenter, 1988) draw attention to the ever-increasing influence of large corporations and economic neoliberalism accompanying the progressive neoliberalization of the US and world economy from the 1970s onwards; and *Strange Days* (Kathryn Bigelow, 1995) reflects the racial tensions surrounding the 1992 Rodney King beating in Los Angeles (Grant 2013, 151–52). As these examples suggest, dystopias typically address issues such as authoritarian governments, corporate control, oppression, class/income inequality, biotechnological developments, and otherness. At the turn of the twenty-first century, a substantial number of dystopian film narratives began to add a further layer to their traditional discourses by showing greater interest in the transnational dimension of socioeconomic borders and hierarchies. *Code 46* (Michael Winterbottom, 2003), *Sleep Dealer* (Alex Rivera, 2008), *In Time* (Andrew Niccol, 2011), *Upside Down* (Juan Solanas, 2012), the 2012 *Total Recall* remake (Len Wiseman, 2012), *Elysium* (Neill Blomkamp, 2013), *Snowpiercer* (Bong Joon-ho, 2013), and *Jupiter Ascending* (The Wachowskis, 2015) are some of the most representative examples of this emerging trend.

This article first offers an overview of the main scenarios that contemporary transnational dystopias present and then focuses on *Elysium,* a film that explores the workings of transnational economic structures at multiple scales. It does so by exploring some of the novel forms and roles that borders adopt and imagining geopolitical formations that offer opportunities to reflect on territorial organization, sovereignty, and welfare in the twenty-first century. Approaching *Elysium* from a cosmopolitan perspective, I aim to enquire into what Sandro Mezzadra and Brett Neilson call "operations of capital", that is, the logics and workings of "dispossession, exploitation, and accumulation" and also "incorporation" into the system (2015, 4–5). Contributing to this debate, the article discusses *Elysium* as a film that mirrors societies governed by neoliberal expansion and the individualization of the benefits that technological advances and modernity bring about. At the same time, the article notes the difficulties that the film finds in imagining alternative modes of socioeconomic organization.

A cosmopolitan approach to transnational dystopias can help to shed light on the technological, economic, and sociostructural changes that they present through a critical lens. As Kwame Anthony Appiah notes, cosmopolitanism is often not "the name […] of the solution but of the challenge" (2006, xiii). Processes of economic globalization produce a range of precarious, unequal, and destabilizing circumstances that are directly related to cosmopolitan concerns. Cosmopolitan challenges are evident in contemporary realities such as transnational tax-evasion, the undermining of the welfare state, public services, and worker's rights, lack of access to healthcare, extreme poverty, uneven access to resources (e.g. water), brutal re-localizations

of capital and labour, forced mobilities, unwelcome migrations, land-grabs, and the erosion of sovereignty (see, among others, Appiah 2006, 163, 169; Beck 2006, 83–84; Papastergiadis 2012, 36–77; Mezzadra and Neilson 2013, 202–35, 245). In general, the workings of global neoliberalism affect a central dimension of cosmopolitanism: well-being and the possibility of having "decent lives" (Appiah 2006, 163, 167). As David Harvey argues, in order to imagine cosmopolitan alternatives, it is necessary to "unpack" the abstract character of neoliberal globalization and examine the actors behind it, their background, their intentions, and how they operate (2009, 57–58). In an attempt to do so, my analysis in this article relies heavily on geopolitical, border, and globalization theories. Such theories are crucial to unpack neoliberal globalization from a cosmopolitan perspective based on the aforementioned concerns. In this sense, the article uses cosmopolitanism in a predominantly methodological fashion.

2 Dystopias Go Global

Although global concerns are not exclusive to twenty-first century SF films, earlier works tend to ignore the global contexts in which they set their narratives. Films like *Blade Runner*, *The Terminator,* and *The Matrix* (The Wachowskis, 1999) are either set in a context of global or even galactic economic unrest or of (presumably global) totalitarian machine domination, but do not include explicit evidence of transnational connections and economic influence. Two pre-2000 exceptions to this are *Rollerball* (Norman Jewison, 1975) and *They Live*. Both films make explicit what the aforementioned works just imply: they show the role of (aspiring) global agents in the socioeconomic system. In *They Live*, two construction workers gradually find out that aliens, along with an elite group of humans, control the economy and manipulate citizens' perception of society. Towards the end of the film, the two workers walk into a gala dinner where a group of business people and aliens celebrate having taken over the whole US and having plans to do the same on a planetary scale by 2020. A few minutes later, a businessman tells the workers: "There ain't no countries any more. No more good guys. They're running the whole show. They [aliens] own everything. The whole goddamn planet. They can do whatever they want." Through these two moments, the film acknowledges the global aspirations of neoliberal capital. *They Live* – along with *Rollerball* – is a clear forerunner of the current tendency towards film narratives that explicitly point to the growing control of economies and societies around the world by a handful of neoliberal actors.

In the 2010s, several scholars have begun to point out the recent interest of SF cinema in migration and borders (Rivera 2012; Hamner 2015; Küchler, Maehl, and Stout 2015). However, contemporary SF cinema deals with a wider range of transnational issues. Situating their narratives in an often explicit transnational context, many twenty-first century SF films combine previous dystopian motifs such as economic exploitation, stratification, class hierarchies, and corporate control with other themes such as borders, (im)mobility, territoriality, sovereignty, transnational networks of power, capital flows, profit-making practices, and even life extraction. By addressing these topics, recent SF films often bring to the fore concerns that are central to the cosmopolitan imagination (e.g. human rights, access to resources, and social welfare).

Although little attention has been paid to these themes as recurring motifs in contemporary SF cinema, Mark Bould identifies non-places, "the dialectics of mobility and confinement," and the relationship between different kinds of labour and global capital as common concerns in contemporary SF films (2012, 184–94). Bould mentions several twenty-first century films that feature characters living in isolated spaces that range from business lounges and offices to ghettoes and refugee camps. Some of the examples that Bould gives include: *Demonlover* (Olivier Assayas,

2002), *Code 46*, *Banlieue 13/District 13* (Pierre Morel, 2004), *Children of Men* (Alfonso Cuarón, 2006), *Eden Log* (Franck Vestiel, 2007), and *District 9* (Neill Blomkamp, 2009). Bould's extensive selection of films shows the prominence of borders and border-related issues in contemporary SF (84–87). Apart from focusing on borders, mobility, and lack thereof, contemporary SF films also deal with other transnational issues. *Babylon A.D.* (Mathieu Kassovitz, 2008), *Sleep Dealer*, *In Time*, *Captain America: The Winter Soldier* (Anthony and Joe Russo, 2014), *Robocop* (José Padilha, 2014), *Elysium* and again *Code 46* imagine worlds in which biometrics, surveillance, and dataveillance play a key role in organizing humans within and beyond the nation state. Another sub-trend that is equally central to the analysis of globalization processes, but has attracted little attention so far, is that of films that picture alternative territorial organizations or project current territorial changes at larger scales or in an intensified manner. *Code 46*, *Children of Men*, *Africa Paradis* (Sylvestre Amoussou, 2006), *Sleep Dealer*, *District 9*, *Captain America: The Winter Soldier*, *Branded* (Jamie Bradshaw and Aleksandr Dulerayn, 2012), *Upside Down*, *World War Z* (Mark Forster, 2013), and *Elysium* consider how these territorial schemes affect norm-making, sovereignty, individual rights, spatial integration, and market expansion. In addition, they point at the extraterritorial operations of specific social actors.

In his account of some of the main concerns that SF cinema addresses, Mark Bould also notes that films such as *Africa Paradis*, *Transformers* (Michael Bay, 2007), and *Sleep Dealer* "illustrate the relationship between global, networked, neoliberal capitalism and the varieties of labour upon which it is built" (2012, 189). Similarly, *Code 46*, *Eden Log*, *Cargo* (Ivan Engler and Ralph Etter, 2009), *Moon* (Duncan Jones, 2009), *Transfer* (Damir Lukacevic, 2010), *In Time*, *Cloud Atlas* (The Wachowskis and Tom Tykwer, 2012), *Upside Down*, *Snowpiercer*, *Elysium*, and *Jupiter Ascending* constitute an additional branch of films that present systems in which those who rule society tend to take advantage of transnational or galactic asymmetries to extract value, health or even lifespan from other people's bodies, not only through physical activity, but also through the body itself, its organs or its life. These films point directly to the social implications and personal costs caused by the operations of global corporate players and the privileges that only exclusive groups enjoy. They throw light on the logics, actions, and actors of global neoliberalism. In sum, contemporary dystopias seem mainly concerned (sometimes explicitly, sometimes ambiguously and metaphorically) with geopolitical and biopolitical issues beyond national frameworks and borders.

3 *Elysium:* Incorporating Markets, Bordering Benefits

The world of *Elysium* provides rich opportunities for the analysis of supranational socioeconomic structures and territorial formations at several levels. *Elysium* imagines life in the year 2154, when the affluent elites live in a spaceship to which no-one else is allowed access. Meanwhile, the rest of humanity remains on an over-populated Earth that is running short of natural resources and whose infrastructures have severely deteriorated. In this world, borders and territories have adopted novel forms that ensure that corporate and political elites enjoy unprecedented levels of well-being while Earth inhabitants have to live in extremely precarious conditions. More specifically, the film revolves around the interactions between Los Angeles/Earth and the Elysium wheel where the elites live, and the control the latter exercise over everyone else. Through this scenario, *Elysium* explores what Anne Laure Amilhat-Szary and Frederic Giraut call "the superposition of vast sets of technologies of control" (2015, 2). In visual terms, the Elysium wheel stands out due to its dimensions, some establishing shots that direct viewers' attention towards it, and several moving aerial shots and close-ups that allow us to inspect it. The wheel and the technocultural specificities of its society are also the central conceptual elements

of the novum that *Elysium* develops. Darko Suvin defines a novum as a plausible "novelty" or "innovation" that "determines the narrative logic" of the story (1979, 63). The wheel is indeed the greatest novelty in the system that the film depicts, as it is a new spatial formation. As such, it produces estrangement in viewers and draws attention to itself. Given the visual and narrative prominence of the wheel and the interactions that it articulates at local, planetary and galactic levels, my analysis of the film focuses on the territorial and socioeconomic reconfigurations in the futuristic and yet utterly familiar environment of the film. In the following paragraphs, I aim to show how *Elysium* presents different kinds of border and territorial formations as central elements in the geographical organization of global/galactic systems whose aim is to protect and foster ever-growing profits and individual privileges.[1]

Situating its action between Earth and its orbit, *Elysium* provides an eagle's eye view of current major geopolitical and economic trends on the planet. *Elysium* captures many of the multiple bordering processes that take place nowadays: reterritorialization and rebordering practices (Sassen 2008, 2014; Popescu 2012; Mezzadra and Neilson 2013), the networking, personalization, and mobility of borders (Walters 2004; Popescu 2012; Amilhat-Szary and Giraut 2015), and the growing use of biometrics (Amoore 2006; Popescu 2012; Potzch 2015). The film takes advantage of the privileged viewpoint that these borders offer to shape a discourse that denounces the growing socioeconomic inequalities that global capital generates. This is an aspect that *Elysium* shares with other recent SF movies, such as *Code 46*, *In Time*, *Total Recall* (2012), and *Upside Down*. *Elysium*'s ability to connect current debates on borders with wider territorial and socioeconomic processes is what makes it a particularly useful film for the analysis of globalization. From a broader geopolitical perspective, *Elysium* engages in current debates on new international trade agreements such as TIPP or TPP and older ones such as NAFTA, the economic annexation of territories in the historical and present development of capitalism (Quijano and Wallerstein 1992; Mignolo 2000; Dickens and Ormrod 2010), the expansionist logics of neoliberalism, the proliferation of special economic zones – SEZs – (Ong 2006; Mezzadra and Neilson 2013), extraterritorial concessions (Strauss 2015), foreign land acquisitions (Sassen 2014, 80–116), and the automation and privatization of violent force (Singer 2003; McFate 2014; Varin 2015). As different as these issues may be, *Elysium* elucidates how they are governed by a set of neoliberal logics in which borders play a key role.

3.1 Beyond the Fence: Dispersed, Mobile, and Embodied Borders

Border walls feature prominently at the beginning of *Elysium*, as the camera flies over a fence topped with barbwire at the edges of the space wheel and an extreme long shot shows the dimensions of the fence. Yet borders do not only appear at the limits of Elysium. As Étienne Balibar notes, borders are "wherever selective controls are to be found" (2002, 84). Migrants in *Elysium* find borders in the homes of the space wheel, as the advanced healing beds only heal those who have an Elysium ID printed in their wrists. In addition, the robot police automatically single out those passengers whom they deem suspicious at a local bus stop. A similar scene also appears in *Sleep Dealer*, where a security guard uses a hand-held scanner to check passengers before they get on the bus. In this sense, borders are, as Popescu writes, "dispersed through society" (2012, 27). The scenario that *Elysium* presents may seem futuristic, yet many borders are already dispersed hundreds of miles inside and sometimes also outside national territories. Examples of this can be

[1] Although economic expansion through the universe may seem an idea confined to the science fictional imagination, both public and private investment on projects beyond Earth is increasingly becoming part of contemporary global economic structures (see Dickens and Ormrod 2010: 531–53). This issue is addressed later on.

found around the world. For instance, Australia processes migrants, refugees, and asylum seekers in off-shore centres outside its national territory in Bintan Island, Indonesia, or Manus Island, Papua New Guinea (Mezzadra and Neilson 2013, 167; Gibson 2015, 83). Since the drastic rise in the number of refugees who arrived in Europe in 2015 (mostly but not only because of the war in Syria), the borders of the European Union seem to have moved from countries in its edges such as Greece or Bulgaria to those well inside its territory (such as Hungary and Austria) and outside of it (such as Turkey). These countries conduct additional controls and have built new fences to manage the arrival of refugees in their territories (Castle and Surk 2015; Langley 2016). Similarly, the US Border Patrol has set up interior checkpoints up to a hundred miles (160 kilometres) away from the borders with Mexico or Canada (Ortega 2014). In this sense, *Elysium* reflects a global tendency towards border dispersal.

The use of drones, satellites, and the data they gather in *Elysium* also show that, apart from being dispersed, some borders are also mobile.[2] Satellites track the course of the three unregistered shuttles that carry migrants to Elysium and, as soon as migrants land there, a Homeland helicopter carrying robot border agents comes to their location. Homeland efforts are no longer concentrated right at the border, but wherever migrants are or go. In this sense, borders move around and follow migrants. Mobile border technologies such as satellites and drones do not only facilitate Elysium's control over its territory, they also help Elysium to carry out extraterritorial actions that aim to protect its citizens and political/economic interests on foreign soil. Satellites locate the place where the shuttle of John Carlyle (William Fichtner) crashes on Earth and allow Elysium to send a group of mercenaries to fight those who plan on attacking the Elysium CEO and stealing the sensitive information that he carries in a brain-incorporated device. Satellites also reveal the identity of the protagonist, Max Da Costa (Matt Damon), as he and some other people who assault John Carlyle are identified by satellite. Later, drones manage to identify Max when he hides in the streets of Los Angeles. Satellites and drones obtain information on the go that helps Elysium's authorities to protect its territory, its privileged status and the wellbeing of its citizens almost in real time.

Elysium – like the film *In Time* – goes even further and suggests that borders are not only dispersed and mobile, but also embodied. Through its depiction of embodied borders, the film suggests that such lines can be anywhere and may build on other borders. Gabriel Popescu explains that since embodied borders are individual, they "allow constant and accurate movement control" (2012, 107). Embodied borders in *Elysium* (and often also in real life) are also biometric borders: they use a subject's unique physical or behavioural traits to establish her/his identity. Common examples of biometric markers are the iris, facial features, fingerprints, keystroke, or movement patterns (Amoore 2006, 342; Popescu 2012, 108; Potzch 2015, 105). The beds that heal citizens in the film work or not depending on the body that lies on them and are designed to only heal Elysium citizens. In order to determine whether someone is from Elysium, they read a tag that is inscribed in the patient's skin. Similarly, satellites and drones can identify Max because his biometric information is part of the database that they use. A brief glimpse of his facial features is enough for a drone to identify him. Apart from pointing to the use of physical features to sort individuals, *Elysium* shows that behaviours can also be used to produce information about bodies. In the film, robots acting as police and parole officers automatically read bodies: they do not only single out Max and instantaneously have access to his criminal history, but also track

[2] Building on the work of other scholars, Gabriel Popescu notes that borders are mobile (2012, 81–82). The idea of mobile borders has also been recently explored by several other scholars in a volume edited by Anne-Laure Amilhat Szary and Frédéric Giraut (2015).

and respond to his reactions (knocking him down when he uses sarcasm, or offering him a pill when his heart rate rises). The robots' reliance on such behavioural markers resonates with Holger Potzch's argument that biometrics serve to identify "abstracted patterns of life" that are deemed to require disciplining (2015, 105–6, 114–15). As several scholars have noted, the growing use of biometric information and subsequent embodiment of the border that comes with this entails that the resulting border is wherever a human body goes (Amoore 2006, 347–48; Popescu 2012, 107; Potzch 2015, 106). Whether in their physical or behavioural form, *Elysium* makes clear that biometric borders are everywhere, as the information that bodies provide can be accessed and deployed wherever Max is. In general, the use of biometric information makes borders dispersed, mobile and embodied at the same time. The combination of different modalities of borders indicates that they superpose and form networks. For example, the healing beds in the film constitute a dispersed border mechanism and also depend on the embodiment of the border at a personal level through the use of biometric information.

3.2 Reconfiguring Norms and Sovereignty

The superposition of borders in *Elysium* points to three current socioeconomic processes: the reconfiguration of norms and sovereignty, market incorporation, and the individual bordering of economic benefits. To begin with, the superposition of borders allows certain actors (such as Elysium ministers and mercenaries) to skirt around sovereignty. Border policing both in the film and real world takes place beyond a nation's territory and its borders. The mercenaries are an illustrative example. One of them, Kruger (Sharlto Copley), receives an order to launch three missiles towards three "undocumented" shuttles from Earth transporting migrants headed towards Elysium. Kruger launches the missiles from Earth and, by doing so, he circumvents the planet's sovereignty. He executes an order on foreign soil, where he and Elysium would have, in theory, no authority. Even though Kruger's action is more of an extraterritorial than a cross-border shooting, this scene recalls other cross-border shootings that have occurred – among others – at the Turkey-Syria, Spain-Morocco, and US-Mexico borders during the last decade (Ortega and O'Dell 2013; Nielsen 2014; Human Rights Watch 2018). Such actions are not only criminal offences but they also disregard sovereignty. As in real life, extraterritorial/cross-border shooting is not legal in the film. Elysium officials note: "we are unauthorized to use our assets on Earth". In this case, the Elysium government calls the person who is ultimately responsible for this action – Delacourt (Jodie Foster) – to a hearing. Yet, it is a hearing without consequences for her. She keeps her political position and rebukes other government members for their "weak" approach to the protection of Elysium's borders. The only measure that the Elysium government takes is to discharge the mercenary who actually executed Delacourt's order to fire. As in the film, governments and judicial powers often allow these actions to go unchallenged, delaying investigations and eventually failing to take action against those who are supposed to see to the compliance with the law but actually break it, and trampling over the people and government of the border territory affected by such violations (Ortega and O'Dell 2013).

Sleep Dealer, *Upside Down*, and *Captain American: The Winter Soldier* present similar scenarios in which armed services deploy force on foreign soil – sometimes with the consent of local authorities – to "defend" their borders or to protect their economic interests. *Upside Down* shows patrol agents shooting anyone who steps into the border area that allows the inhabitants of two neighbouring planets to interact in person. The agents open fire even if those who step into this area are still in their own planet/country. Similarly, *Sleep Dealer* extends the range of action of the US border forces with regard to dams owned by US companies in Mexico and Colombia. The film includes

two scenes in which drone pilots attack so-called "water terrorists", that is, those whom they deem a threat to the water company. *Captain America: The Winter Soldier* envisions a global surveillance system comprising satellites and military-like flying ships capable of shooting anyone who poses a threat to the economic and political powers anywhere on Earth. *Elysium* participates in this dialogue around extraterritorial armed forces with other contemporary SF films and develops a cosmopolitan critique of the advance of neoliberalism in terms of territorial scope.

At the same time, *Elysium* presents a more nuanced picture of current geopolitical trends than the aforementioned films by capturing the proliferation of private armies and mercenaries since the 1990s, a process that has contributed to increasing the volume of private economic activity and to the consolidation of neoliberalism (Singer 2003; Tonkin 2011; McFate 2014; Varin 2015). In the film, Kruger retrieves the missiles that he is asked to launch from a container displaying the words "Elysium Corporate Authority" and "*Civil* Cooperation Bureau" [my emphasis], hinting that he is not part of the military. When he and two other mercenaries chase Max and his colleagues, there is nothing in their gear, equipment, or ship that links them to Elysium. Indeed, the ship carries a South African flag (a country and government that does not appear in the film), thus suggesting that these private mercenaries may have bought it from the no-longer existing (in the film) government of South Africa. In addition, Kruger's operations are not officially authorized by Elysium's government, thus recalling the covert nature of many of the operations carried out by mercenaries and private military firms in real life (Singer 2003, 48). By introducing private military actors in its narrative, the film enables a reading of military privatization as one of several steps towards the incorporation of activities that increase private sector profits. However, *Elysium* misses the opportunity to present these mercenaries as part of the military corporate industry, to show their role in the global economy, and their connection to finance, which according to some scholars, is a prevalent reality (Singer 2003, 47).

Production models and technologies of screening and control in *Elysium* show a wide network of extraterritorial economic influence designed to cater to the needs of Elysium corporations and the extreme neoliberal system in place in the film. Armadyne is a company managed by an Elysium citizen – John Carlyle – and it manufactures its products (robots) for the orbiting community. The government of the space wheel then decides how to deploy the robots both on Earth and Elysium. The large dimensions of the facility and the workers' precarious conditions point to Armadyne's resemblance to a *maquiladora* or a factory in an SEZ (special economic zone) – both examples of extraterritorial concessions. As Michael Strauss points out, extraterritorial concessions consist of a company or country operating activities in a delimited area on foreign soil in which special norms or laws apply (2015, 63). He also notes that "a leased territory can be a potential target of military attack" (2015, 66). Armadyne adopts security measures such as scanning workers to ensure that they do not carry any weapons into the factory. This suggests that Armadyne is an extraterritorial concession. A similar way of depicting an extraterritorial concession appears in *Sleep Dealer*, where armed guards, automatic firearms, and drones protect dams owned by US capital in Colombia and Mexico. Extraterritorial concessions such as SEZs in China, India, Latin America, some African countries (often with China as a mediator) or *maquiladoras* in Mexico adapt their national legal framework to specific areas so that companies may benefit from a set of norms that meet their needs (Ong 2006, 19, 77, 106; Mezzadra and Neilson 2013, 216–17). In this sense, corporations indirectly alter legislation to suit their interests. Elysium's power to alter norms is also evident in its ability to designate Los Angeles as a no-fly zone as the community see fit, temporarily banning any flights to or from the city. Such configurations indicate that Elysium reconfigures norms at its will and evince the malleability of Earth's sovereignty.

3.3 Territorial Integration and Market Incorporation

Elysium also presents a world of territorial and economic integration. Even though it focuses on a specific area – a sprawling LA in ruins – the film suggests that this represents the state of most of the planet. This is evident from the very first shots. *Elysium* opens with a series of aerial tracking shots that show several identical sprawling urban areas in decay. The speed of these shots, the substantial range of space that they cover, and the almost-identical landscapes that they show indicate that the view they offer is a generalized reality. In addition, the captions that accompany these initial shots introduce the film's geographical premise by referring to Earth as a whole. The fact that the parts set in LA were actually shot near Mexico City and that LA visually recalls, as Celestino Deleyto points out, a "Middle East war-wrecked town" (2013), also contribute to the effect of making this fictional LA look as if it could be set almost anywhere on Earth. After these glimpses of urban spaces, an establishing shot of the planet suggests that Earth has become a single territory. The film further reinforces this image of a unified global space through additional establishing shots of urban areas in decay without specifying their location at different points in the film.

Such territorial integration on Earth, along with Elysium's extraterritorial power, indicate that Elysium has set up a large-scale project of economic extraction in which those who live in the space station benefit from the generation of value from Earth as a whole. Free trade with Earth satisfies one of the biggest concerns for Elysians (apart from border security): to maximize revenue. In a conversation with Armadyne CEO John Carlyle, other managers show their concern that "a clear path to upside" (to higher profits) may be compromised. Relying on different narrative techniques, other SF films such as *They Live* and *Jupiter Ascending* have shown similar cosmopolitan concerns by having civilizations from distant planets come to Earth to incorporate its economic activity into their system. Similar market enlargement and integration patterns are taking place in the world right now, both at private and national levels. A clear example from the private sector is Apple. On October 27, 2015, the company presented the largest annual corporate profits in history ($53.4 billion), mostly thanks to its sales in the Chinese market (News Corp Australia 2015). In general, such results depend on a constant renegotiation of norms to allow companies to penetrate markets with ever more advantageous conditions.

Apart from trade and market integration agreements in place such as NAFTA and the one regulating the European Economic Area, several national governments are trying to develop similar agreements at an even larger scale. Two of the most prominent examples are the Trans-Pacific Partnership (TPP), which currently includes Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam, and the Transatlantic Trade and Investment Partnership (TTIP) between the USA and European Union. Although the Trump-led US government has recently retreated from the TPP and put the TTIP on hold, it is likely that the US will join these or similar deals in the future (Rappeport 2018). Before the United States' current position, these agreements entailed a major leap in scope. The TTIP and the TPP were forecast to regulate economic zones that account for 50% and 40% of the world's GDP respectively. Together, however, they were expected to comprise 60% of the world's GDP, as the US initially participated in both agreements (Oxford Analytica 2014). These agreements guarantee an easier mobility of capital and goods, but do not envisage the free mobility of people, nor do they protect their welfare. TTIP creates advantageous normative frameworks for transnational business players, giving them a say in public policy-making and granting them the right to sue governments if their policies harm their profits – however beneficial such policies

may be for the environment or society (Strange 2015, 86; De Ville and Siles-Brügge 2016, 130–31). In short, such agreements seek to expand the scope of corporate power and profits. While the idea of a homogeneous, completely-integrated Earth that *Elysium* sketches is deceiving, it hints at the role of scale in the current development of neoliberalism.

The current trend towards the enlargement of the scope of economies by territorial means that *Elysium* presents is not entirely new: it is part of a larger historical context of territorial incorporation that is likely to keep developing in the future, as the film suggests. Aníbal Quijano and Immanuel Wallerstein argue that the Americas were essential in the growth and establishment of the modern world-system, which they trace back to the 16th century. They note that one of the key factors in the development of the world-system was that the Americas provided a large extension of land (1992, 549–50). Similarly, Walter Mignolo observes that the first Christian mission that incorporated the Americas into a world-system subsequently gave way to what he calls the civilizing, developmental, and neoliberal missions (2000, 724–25), all of which have been ways of reorganizing world geopolitics to expand the economic scope and influence of capital-hoarding elites. Opportunities for profit enlargement are not limited to Earth: Peter Dickens and James Ormrod have noted the relevance of outer space in current economic systems and its central role in future economic growth. In their work on the expansion of the economy, Dickens and Ormrod point to current realities such as the role of satellites in the functioning of communication systems and their relevance in sectors such as the media and finance (2010, 533–34). They also mention plans for expanding the tourism industry in outer space and the economic potential of setting mines on other planets and finding new ways of using solar energy in space (2010, 535, 541). *Elysium* captures this ongoing development of the neoliberal mission in outer space through the spatial concept that governs the narrative, by filtering some events through satellite information screens, and through the camerawork that the film uses to present the space station. This last aspect is evident in an establishing shot at the beginning of the film in which the camera pans from Earth to the Elysium wheel as the music increases slightly in volume. Apart from showing the location of a new economic frontier, this shot captures the radical expansion of the system in a visual and aural way.

4 *Elysium*'s Ambivalent Cosmopolitanism

The expansion, integration, and accumulation processes described above are accompanied by the bordering of the profits and benefits that Elysium generates (a clean environment, advanced technologies, fast transportation, comfort, leisure, premium healthcare). Of all these benefits, the film puts special emphasis on access to health treatments and the de-bordering of this 'privilege' at the end of the story. *Elysium* juxtaposes an overcrowded and deteriorated hospital with scarce resources in LA with the individual healing beds that every Elysium citizen seems to have at home. Advanced technologies also check health risks and life threats for Elysians and provide them with instant information about their health anywhere on Earth or the space station. For example, when John Carlyle's shuttle crashes in LA, a computer lets him know that he is not harmed and provides Elysium with updates on his condition. The dispersed, embodied, mobile, and extraterritorial character of borders guarantees restricted access to such Elysian privileges while allowing the expansion of borderlands and of the neoliberal economic system that Elysium relies on. The film suggests that borders do not only delimit (rich) countries but also protect the individual property, benefits, and security that a few enjoy. When a shuttle with migrants heads towards the space station, Elysians treat it as a "security breach". This breach does not pose a violent threat for Elysians, but rather threatens their privatized and personalized security (which

reflects a reversal of the social security schemes that some countries built in the second half of the twentieth century, and are now being privatized and thus, individualized). The film reflects what William Walters, in his analysis of British security policies, calls the "reordering and […] re-hierarchizing of political priorities" in favour of border security and to the detriment of social welfare (2004, 244). Elysians deem the inclusion of more citizens an obstacle to the growth of their income and privileges. In the hidden logics of this system, more people equals less share. However, at the end of the film, Max and Spider (Wagner Moura) – the leader of the gang that sends the shuttles to Elysium – hack Elysium's computer and reset it so that everyone on Earth counts as an Elysium citizen. By doing so, they de-border Elysium's health privileges. Some of the last shots show people of different ethnicities running towards medical shuttles sent to Earth. Thus, the film celebrates the cosmopolitan ideal of global access to decent healthcare.

However, even though *Elysium* appears to develop a cosmopolitan discourse through its celebration of universal healthcare and its critical portrayal of borders, extraterritorial operations, and market incorporation, it is more ambiguous in other respects. The ending hints that the divide between both worlds vanishes as every person on Earth gets Elysium citizenship and access to healthcare. Without doubt, healthcare is an important issue, but it does not guarantee the creation of a series of circumstances that allow people to have a decent life (although it contributes to it). In spite of the changes that occur at the end of the film, a gulf still exists between the former citizens of Elysium and those who live in resource-depleted areas, those who have poor job conditions or do not even have a job, and presumably also other groups who do not explicitly appear in the film, such as the homeless and families without income. At the end of the film, the systemic circumstances that lead most people to live in shanty towns and subsist through informal economic activities do not change. Although the different borders in *Elysium* disappear or weaken, the film's ending overlooks the central role of the economic model (extraterritorial concessions, market integration and expansion, corporate cultures of profit maximization, and resource exploitation) in creating the harsh life conditions that most people on Earth endure throughout the narrative. Echoing Giorgio Agamben, the authors of "The antiAtlas of Borders, A Manifesto" note that "neoliberal thinking [...] sees addressing the root causes of various issues as more costly than dealing with their effects" (Parizot et al. 2014, 3). This is precisely what *Elysium*'s ending does: it presents the mitigation of some effects of Elysium's neoliberal economic practices (the lack of healthcare) as a solution for people on Earth. It proposes a patch on the system rather than its reformulation. *Elysium* also reflects what Mark Fisher calls "capitalist realism": the inability to imagine alternatives to neoliberalism (2009, 2). Conforming to this notion, *Elysium* generates contradictions and makes the alternative (a global healthcare scheme) part of the mainstream (a savage neoliberal system) (Fisher 2009, 5, 9). In the end, *Elysium*'s cosmopolitan dreams fall prey to the capitalist-realist environment that permeates contemporary life.

Finally, another aspect that contributes to the ambivalent character of *Elysium* is the role of race in the film. *Elysium* includes characters of different ethnicities: LA is a largely Latino area where some Spanish can be heard; the "undocumented" shuttles that travel towards Elysium carry Asian, Latino, and black characters; Carlyle has a video call with other managers who are a black man, a blonde Anglo woman, and an Asian man; and the last name of Elysium's Prime Minister is Patel, suggesting that he is of Indian descent. Yet, except for the nurse Frey (Alice Braga), Max's friend Julio (Diego Luna), and perhaps also Spider, most of the main characters (Max, Delacourt, Carlyle, Kruger) are white. More importantly, the end of the film emphasizes Max's role as a Christ-like (and white) saviour, pushing other racial and systemic debates to the side. In this sense, *Elysium* develops a similar racial discourse to *The Matrix*. Nicola Rehling

observes that "despite the trilogy's obvious effort to include a multicultural cast […], Western racial norms are reinscribed" by presenting Neo as a white messiah (2009, 126). In one of the last scenes of *Elysium*, Max gives his life – that is, he dies – so that the rest of humanity may be granted citizenship and have access to healthcare. The last moments of the film pay tribute to Max's heroism by recreating some moments from his childhood. Previously, the film celebrates universal healthcare through several shots of non-white people running towards the health shuttles that are landing on Earth. The inclusion of moments from Max's childhood shifts attention from the actual changes that the world is about to go through to focus on the white saviour. In fact, the very last shot of the film is an image of Max as a kid running on the street as a thin halo of light glows in the middle of the frame. In addition, the shuttles and robots that come to heal people are also white, and their colour fills the frame in several of the last shots. Although white is a colour that is commonly used in medical contexts, such whiteness is non-existent in the LA hospital that appears earlier in the film. These images thus reinforce the image of the white saviour and the strong dichotomy between the whiteness of the saviours and the blackness of the saved, a trope that Matthew Hughey has identified as a common practice in cinema (2014, 2). In spite of the potential that *Elysium* has shown for the analysis of contemporary global phenomena from a cosmopolitan perspective, the film fails not only to imagine systemic reinvention, but also to envision non-whites participating in the construction of their future.

5 Conclusion

Elysium shows that governmental and corporate actors defend private economic interests by establishing systems of superposed borders, reconfiguring norms, and skirting around sovereignty. In addition, the film's imagined geography captures contemporary processes of territorial integration, market incorporation, and profit maximization. However, Elysium's elites do not only enjoy the privilege of accumulating capital: they use their economic and political power to enjoy a series of benefits (excellent healthcare, fast transportation, leisure, an unpolluted environment, and technological advances) for themselves. That is, they border the benefits of technocultural modernity. Despite the critical character of this scenario, *Elysium* offers an ambivalent position towards borders and cosmopolitan possibilities. On the one hand, the film exposes an exploitative socioeconomic system that operates at multiple geographical scales. On the other, it perpetuates racial boundaries and proposes patches to the aforementioned global designs rather than a revision of the function of borders and substantial systemic reform. This cosmopolitan ambivalence is not exclusive to *Elysium*. Other recent science fiction films such as *Avatar* (James Cameron, 2009), *2012* (Roland Emmerich, 2009), *Cloud Atlas*, and *The Host* (Andrew Niccol, 2013) also develop ambivalent narratives that offer easy solutions for complex transnational challenges, avoid tackling thorny cultural conflicts, celebrate attitudes of openness towards Others who are not really alien or different, or simply end up privileging white characters. Beyond the scope of science fiction, María del Mar Azcona has also argued that Matt Damon's star persona is imbued with cosmopolitan ambivalence (2018, 7–12). In this sense, *Elysium* participates in a wider cinematic discourse that envisions cosmopolitan alternatives to systems of transnational exploitation and discrimination and simultaneously reinforces the social structures and practices that prevent cosmopolitan possibilities from developing.

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Part II

BOOK REVIEW

ELOPE

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Australian Aboriginal SF – Blending Genre and Literary Fiction: A Review of *Futuristic Worlds in Australian Aboriginal Fiction* by Iva Polak

ABSTRACT

The fact that Iva Polak's monograph *Futuristic Worlds in Australian Aboriginal Fiction* is the first volume in Peter Lang's World Science Fiction Studies series, edited by Sonja Fritzsche, is symbolic of the actual novelty and relevance of Polak's work. It is, in fact, the first book-length study in English dedicated to the analysis of Australian Aboriginal fiction from the point of view of the theory of the fantastic.

Writing a study such as this entailed finding a solution to complex research problems that go beyond the intricacies of the literary text and theory. Namely, SF works by various non-Western authors have been so far largely classified into a very broad category of postcolonial science fiction, without looking into the very specific political, social and cultural situation that colours Australian Aboriginal fiction, creating thus a significant critical gap in the reception of these works. So, how does one write about Aboriginal SF when Australian literary critics deny the existence of such body of works, and how does one apply the theoretical frameworks developed by Western authors onto such a literary corpus? Polak's research has tried to provide answers to these questions in order to illuminate the largely unknown field of the native writers' science fiction and to elaborate on the "specific intra- and extra-literary matters" (Polak 2017, xii) that contributed to Aboriginal SF being largely neglected by literary critics.

The book consists of an introduction, conclusion and seven chapters, two of which delineate the theoretical frameworks and terminology, and the remaining five include literary analyses of works by Eric Willmot, Sam Watson, Archie Weller, Alexis Wright and Ellen van Neerven. In the introduction, the author deals with "the complexities accompanying Aboriginal fiction and science fiction" (Polak 2017, xi). These include Australia's propensity toward realist and documentarist fiction, and the accompanying invisibility of Aboriginal genre fiction when it comes to readership, scholarly reception (criticism) and the book market in general. In this part Polak also elaborates on why reading Aboriginal fiction from the point of view of SF may be problematic, both theoretically and culturally, given that the only available theoretical apparatus is Western, rather than Australian, let alone Aboriginal, since studies dealing with fantastic prose fiction written by indigenous and ethnic authors only began to appear in the twenty-first century.

Following this, the first chapter is dedicated to clarifying the terminology (the fantastic/fantasy/Fantasy/SF) and the chosen Western theoretical approach to the literary corpus of works by indigenous authors. In the words of the author herself, the study relies on a "theoretical bricolage of existing theoretical approaches to the fantastic, without attempting to indigenise theory" (Polak 2017, xii), which means that the inevitable theoretical backbone provided by Tzvetan

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Todorov is expanded with the work of authors such as Amaryll Beatrice Chanady, Neil Cornwell, Christine Brooke-Rose, Eric S. Rabkin, W. R. Irwin, Rosemary Jackson, Irene Bessiere, and Kathryn Hume. In chapter two, the author provides the outline of the already existing theoretical field of postcolonial SF which arose from a logical connection between postcoloniality and SF written by authors inhabiting minority positions and dealing with topics of temporality, space and identity, which make up the centre of postcolonial studies. To anyone studying and reading such fiction the connection between colonial projects and the genre is clear, as SF makes heavy use of two *topoi* that have to do with colonialisation and contact with the unknown. First of all, there is usually a faraway destination (planet) waiting to be colonised, and there is also the figure of a stranger, an alien, (an Other) who represents a threat to the status quo. The complexity of the narrative arises from the inherent ambiguity of both *topoi*. The fluid status of the two concepts – a new territory and a stranger – depends heavily on the perspective of the colonial/postcolonial narrator and the reader who identifies the Other; that is, decodes others as strangers and perceives someone's land as no man's. Australia itself is a case in point, as it was declared *terra nullius* by the English colonisers when, in fact, it was peopled by hundreds of thousands of Aboriginals – people native to the continent.

Following the discussion on postcoloniality and SF, there are several chapters dedicated to a comprehensive analysis of six literary texts written by Aboriginal writers, whereby Polak's study can be said to be establishing some form of Aboriginal SF canon. For each of those texts, Polak provides an adequate socio-historical context, an overview of the text's reception, and an analysis of textual features within the framework of the fantastic as a meta-principle, which is followed by the definition of the text's genre. Most of the texts turn out to be hybrid, a blend of fantastic genres such as fairy tale, magic realism, science fiction, Gothic and others. In chapter three she tackles Eric Willmot's *Below the Line* (1991), which explores the possibility of an Asian invasion and is identified as the first Aboriginal SF novel. The following chapter deals with Ellen van Neerven's novella "Water" (2014) in which she depicts plantpeople, an Other in the form of a non-human novum, and chapter five tackles Archie Weller's novel *Land of the Golden Clouds* (1998), a work situated in the very distant future and drawing extensively on the Biblical motif of the Second Coming and possible restoration after an apocalypse. Chapter six deals with Sam Watson's novel *The Kadaitcha Sung* (1990), a complex "slipstream" narrative that provides models of cultural experience of reality as it explores Aboriginal Dreaming and illustrates the fluidity of knowing and being in the postmodern existence. The final text considered is Alexis Wright's epic *The Swan Book* (2013), which leads the book to its conclusion. In this, Polak argues that Aboriginal SF represents a turning point not only in the development of Aboriginal fiction, but also for SF in general. The conclusion's general position of cautious optimism arises from the fact that the authors construct future postcolonial worlds which testify to the possibility of surviving colonialism. Whatever it may be, the future does arrive and, although it may be slight, the promise of new life even after some form of disaster or doom is seen as a sort of comfort.

In the context of global contemporary research marked by interest in the issues of trauma, memory and identity, Iva Polak's study represents a relevant contribution to literary studies in general, and SF studies in particular, as it analyses fictional constructions of future worlds narrated from the point of view of the Aboriginal writers' own cultural memory. Moreover, Polak's book tackles both the early reception of the chosen prose texts and their generic features (form and content) which assign these texts to the genre of science-fiction. The misconceptions that gave rise to the traditional and, by now, out-dated qualification of science-fiction as trivial are clearly revealed when confronted with texts that deal with Aboriginal cultural trauma; in fact,

the construction of future worlds establishes itself as the mode through which trauma attempts to be resolved. As such, SF occupies the position of literary fiction, rather than just genre fiction, as the works analysed serve to evoke empathy and identification on the one hand, and critical thinking on the other, rather than to serve as mere escape from the everyday and humdrum.

Lastly, and quite importantly, in her analysis Polak is very cautious when it comes to the tricky, politically significant fact of her position as a non-Aboriginal literary critic. She is well-aware of the fact that she does not share the cultural experience of the authors and navigates her use of Western theoretical models tactfully, especially in light of the awareness of historical issues of censorship and disciplining of indigenous cultural productions. Consequently, she is explicit about her care not to resort to cultural appropriation or misinterpretation, inviting new and other interpretations by other critics in potential future studies. Having all this in mind, it is safe to say that *Futuristic Worlds in Australian Aboriginal Fiction* is a very rewarding read for all SF scholars, as it opens up new and different venues of research and elucidates an as-yet-unknown corpus to potential researchers and readers.

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