Bachelor's project

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"First you use machines, then you wear machines..."

Technology, environmentalism, and convenient action in Isaac Asimov's *The Gods Themselves*, and John Brunner's *Stand on Zanzibar*

Bachelor's project in English
Supervisor: Yuri Cowan
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Kunnskap for en bedre verden

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> “If our species does not survive the ecological crisis, it will probably be due to our failure to imagine and work out new ways to live with the earth, to rework ourselves and our high energy, high-consumption, and hyper-instrumental societies adaptively.” (Val Plumwood, *The Eye of The Crocodile* 3-4)

There is an ongoing environmental crisis, a crisis widely stipulated to be at least in part caused by the growing need of human consumption. To highlight the anthropocentric quality of the climate crisis and resulting phenomena, the term “Anthropocene” has been proposed to denote this modern era, where the human being has become the most prominent “bio-geophysical force” (Liana Chua & Hannah Fair 1). Per Gabriele Dürbeck, we as humans have transformed 75 percent of all land on Earth to fit our intensive usage (Dürbeck 112), and so the scarcity of the past is long gone. But it seems there are pressing problems in attributing the current predicaments of the environmental and energy crises to human nature, however anthropocentric in nature they may be. Even so far so that positing this as an extenuation might in fact be seen a denialist response to what Wendell Berry, quoted in Gerry Canavan’s essay on oil and its inevitable end, calls the dread brought on by challenging a “Faustian economics” that is built upon the notion of infinite growth and cheap fossil energy (Canavan 332). The author stipulates that there seems to be a need for more imaginative responses to “transform [… the] dream-wish [of salvation] into waking act” (Canavan 346).

To investigate the curative possibilities of human creativity in the face of crisis, this essay looks to science fiction, specifically John Brunner’s 1968 *Stand on Zanzibar* and Isaac Asimov’s novel *The Gods Themselves* that followed soon after in 1972, and among others the ecocritical work of Gerry Canavan, Val Plumwood and Tracey Heatherington. In a time where anthropomorphic climate change is being offered up as a newly observed phenomenon (see Liana Chua & Hannah Fair), science fiction can highlight the political nature of the crisis by providing creative narratives of ecological change through its meditations of technology, ecology and ideology. In Brunner and Asimov’s stories, technology becomes an ideological tool of dominance over nature, perpetuating the human narrative of eco-mastery and conquest for convenience, ultimately rendering us unable to look past technology to imagine a future without fossil fuels. The novels’ problematizing of the ‘other’ shows that humans tend to rather think of themselves as a thinking machine than a feeling animal. The essay also considers whether there exists a possibility of these novels to alter conversational landscapes in that they allow readers to visualise new forms of environmentalist thought and action.

There is no real scarcity of sharp analysis of the environmental-energy crisis. In *The Eye of the Crocodile,* the Australian ecofeminist Val Plumwood considers the frightening possibility that due to a failure of human imagination humanity might not survive the environmental crisis. As Freya Matthews, Kate Rigby and Deborah Rose elaborate in the introduction to the book, the critique she developed throughout her life focuses on the long-standing human illusion of mastery over the environment, and is uniquely founded on her close encounter with death (Plumwood 5). On a kayaking trip in Northern Australia Plumwood was attacked by a saltwater crocodile, a species native to the vast estuarine wetlands of Northern Territories, titled in the book's preface as "one of the last remaining major predators of human beings" (Plumwood ix). She miraculously survived the incident, not through her wits as a human, but through what almost seems a benevolence of the predator towards the prey. The prose inspired by the tragedy is beautiful: poetic, practically devoid of any resentment, and embedded with true wisdom of the unity of the human and non-human. Much of Plumwood's later work stems at least in part from this incident, regarding which she states that

> My dramatic entry into the Heraclitean universe opened my eyes and made me acutely aware that we are not in fact different from other animals but material beings vulnerable to death and decay. By keeping ourselves separate from, and ignorant of, this other universe, we maintain a distinction that provides protection from deeply rooted anxieties about mortality and our supposedly superior human status (Plumwood 42).

One could argue that while there is melancholic comfort in the acknowledgement of human folly – as both Plumwood and Isaac Asimov seem to do, evident in the latter case in the author's opening of *The Gods Themselves* with a dedication to humanity's fight against stupidity – this comforting notion might in the grimmest case be damaging to the conversation culture around the issue, as it might work to obscure the political dimensions of the climate crisis. In relation to the anthropological study of the Anthropocene, Liana Chua and Hannah Fair highlight an academic and artistic split in views of how to engage with the issue. A creative, speculative approach might have a fair amount of overlap with a manifesto, in that it prescriptively attempts to find what Chua and Fair call "new ways to live and survive in the Anthropocene" (Chua & Fair 10). The authors' characterisation of survival irremovably includes species co-existence, and thus this approach often also takes into consideration the non-human actor, placing the observer into the body or entity of another, in an attempt to inspire empathy and negotiate a sort of peace treaty between the human and non-human realms (Chua & Fair

10). While interesting, these “speculative and dominant scientific approaches” alike face criticism for a failure to account for a drive for “depoliticising their subject matter” when there exists a severe need for political will and engagement (Chua & Fair 10), instead resorting to abstract and even alienating depictions to disembody the reader. If concrete advice is what we look for when reading creative Anthropocene literature, one could do worse than to turn towards scientist-turned-author sages, who translate their scientific acumen into imaginative narratives that apply to laymen.

Considering the above criticism of the creative anthropological approach, there is an argument to be made against creative writing that fails to cross-examine the political dimensions of the environmental crisis. Per Chua and Fair, the concept of Anthropocene exists in relationship with capitalism, power and inequality, and there is a prevailing myth that human ignorance stands in the way of a functional environmental solution (Chua & Fair 10). This notion is not all too different from Plumwood’s idea of the possible demise of humanity being ushered in by the lack of our imaginative potential. These stories radiate a comfort, but obscure the bigger picture of political games over scarce resources. If we see the environmental crisis as a product of deliberate politics, we can more rigorously start to examine and track the vast but elusive recesses of what Timothy Morton terms a ‘hyperobject’ – an object so spatiotemporally massive that it occupies “a high-dimensional phase space that results in their being invisible to humans for stretches of time” (Morton 1).

Both *Stand on Zanzibar* and *The Gods Themselves* espouse a scientific answer to the impending socio-ecological disasters. Asimov’s novel is quite a bit less dystopian than Brunner’s – indeed going as far as techno-utopianism – in its investigations of the relationship between self-interest, technology and the ‘other’. This is reflected in the general tone of the book, and the characters’ tendency to fiercely push for one and only one agenda without facing much resistance from internal conflict. Arguably delivering in its critical weight with more complexity, *Stand on Zanzibar* seems to suggest a cross-disciplinary approach to dealing with ecosocial matters and acknowledges the inadequateness of single viewpoints (Bukeavich 65). Brunner’s characters struggle enormously to see the entire picture – not surprisingly, since their immediate personal environments are controlled by easily accessible distractions à la Aldous Huxley’s *Brave New World*. This is contrasted with the scholarly, interdisciplinary field of view of Donald Hogan – one of the book’s protagonists – to effectively argue not only for the need for several branches of knowledge to co-operate, but to also in the end bring upon the reader the cruel finale of the book where Hogan’s intellectual resistance is crushed and surmounted by his military training – pushing the book in its totality well into the realm of dystopia. In *Stand on Zanzibar*, technology is used as an instrument to control, deceit and implement the ideological basis of comfort. The absolute non-equivalence of material wealth to social wellbeing is well illustrated in Murray Bookchin’s writing in his collection

of essays, *Post-Scarcity Anarchism*, where he argues that the technological conditions for humanity's liberation of material shortage have been achieved, while the social conditions explored by writers of soft sci-fi such as Brunner, are no better off for it. In the original introduction of the book, Bookchin states that the technological advancements in the last few centuries have brought "a sufficiency in the means of life without the need for grinding, day-to-day toil" (Bookchin 12). This material wealth – the accumulation of which in neoliberal rhetoric is analogous to freedom – is not indicative of a free and thriving society. In its core, Bookchin's definition of post-scarcity is thus decidedly post-material, when he states that "[t]he human relationships and psyche of the individual in a post-scarcity society must fully reflect the freedom, security and self-expression that this abundance makes possible" (Bookchin 13).

In both novels, the long view of sustainable environmental action is obscured by the endless human quest to alter their environment with accordance to their immediate needs, simply referred in this essay as convenience. This notion takes an interesting turn, when in the face of catastrophic environmental change immediate convenience starts to increasingly resemble a return to bygone days of a 'functional' or human-friendly climate. As is evident in the geoengineering efforts of *Stand on Zanzibar,* where a dome over Manhattan has been built to preserve what is remembered as a New York climate – cold and drizzly – efforts to alter our surroundings are often infused with a distinct nostalgia. This would indicate a merging of the long-term and short-term interests of humanity. However, it is exactly at this point when the budding environmental consciousness encounters fierce resistance from a ruthlessly growth-oriented economy whose reliance on cheap energy resembles an addiction, starkly evident in its recurring as a metaphor in the rhetoric of every US president since Richard Nixon (Canavan 341). This is the point where science fiction enters the picture; if the genre does have a role as a creative medium imagining ethical, moral and political alternatives, it is the role of the futurological chronicle that, per Kim Stanley Robinson, brings the future into the scope of our current decision-making, the future from which our short-sighted system continuously pilfers (Robinson, quoted in Canavan 340).

Tracey Heatherington, writing in *Nature, Science, And Politics In The Anthropocene,* lauds the "dismaying accuracy" of Isaac Asimov's 1972 *The Gods Themselves* in predicting the dysfunctional climate politics of the late 20th century (Heatherington 197). She further explains that an exploration of the novel is worthwhile as "it goads us to rethink the role of environmentalism and its conventional approaches to nature, science, and politics" (Heatherington 197). In the speculative novel by the prolific science-to-sci-fi interpreter, humans are gifted with a virtually endless energy supply, seemingly all without caveats. The 'conventional' environmentalism does little to dig deeper into the nature of the human pursuit for comfort, the material conditions it necessitates, or the inherent

desirability of a clean energy source. Instead of assigning an intrinsic value to “the free, clean, and copious energy”, a character states, the true wealth of the invention is that “mankind no longer has to work for a living”, meaning “that for the first time in history, mankind can turn its collective brains to the more important problem of developing its true potential” (Asimov 92). *The Gods Themselves* does not go into depth in showing us the effects on a society of a such technology – rather, the novel tells its story mostly through inter-person as well as internal dialogue – and it doesn’t have to; it is a story of the distinctly and humanly flawed hero-lites and decision-makers, and its uniform portrayal of the large part of humanity as self-interested and hedonistic takes its necessary narrative other elsewhere, as far as from another universe. Not unlike Brunner, Asimov ventures remarkably deep into the interrogation of why we as humans are unable to pursue a sustainable solution, and why our sense of comfort is not aligned with the long-term health of our planet.

In the end of the novel, the convenient *deus ex machina* salvation of humanity comes through sudden technological advancements made by humans with Promethean scientific expertise, all of whom are fuelled by this distinct self-interest, by either their hubris or vendetta. If Asimov is echoing the typically North American notion of human greed as the necessary ichor of environmental movements, as Heatherington posits, it warrants some examination. Asimov himself distinguishes between an “obvious” and “desired” solution (Asimov 71). The obvious would be to give up that which is known to be harmful, but what is desired is equal convenience or pleasure with no repercussions. This differs from *Stand on Zanzibar*, where the harmful is more elusive, and there are no obvious solutions at all, but instead a complexly woven mesh of entangled ideas, snippets, yells and cries, lending a lifelike quality to Brunner’s work. The dilemma at the heart of *The Gods Themselves* is from the very beginning a problem of science: an anomaly in test results, a curious observation, and in the end, a technological solution. Paraphrasing Ozzie Zehner, Heatherington further highlights a trifecta of problems inherent in Asimov’s technological optimism of looking for convenient win-win solutions to difficult problems. She fleshes out Plumwood’s speculation, and identifies “a failure to evaluate our energy choices with objectivity, instead of wishful thinking; a failure to examine the structural roots of the environmental issues we face; and a failure of the imagination” (Heatherington 202). They point to a glaring blind spot in a certain brand of environmentalist thinking: even in the face of disaster, convenience takes a priority. Asimov addresses this directly, when he states that “[i]t is a mistake … to suppose that the public wants the environment protected or their lives saved … [w]hat the public wants is their own individual comfort” (Asimov 70).

It is doubtful, whether Asimov himself espouses this belief, but Heatherington’s criticism is certainly convincing where it pertains to the novel’s lack of structural analysis and the techno-

utopianism prevalent. In the final part of the book, the radiochemist Dr. Benjamin Denison – who had his career destroyed by Hallam, the pump's creator – criticises the novel's main environmentalist Peter Lamont's pursuits to have the pumping halted as going against a higher spatiotemporal force of nature; the force shaping our world as irreversibly as time does, the force of the human self-interest:

> Lamont's solution is to force abandonment of the Pump, but you can't just move backward. You can't push the chicken back into the egg, wine back into the grape, the boy back into the womb. If you want the baby to let go of your watch, you don't just try to explain that he ought to do it—you offer him something he would rather have (Asimov 390).

Appropriately, Denison's own solution seeks to find an answer outside the jurisdiction of the laws of our universe. Following the remark, Denison and the native Lunarite Selena Lindstrom arrive at the conclusion that nothing between one and infinite universes makes sense. Since the existence of several universes has been proven through the contact with the 'para-men', they deduce that there must in fact exist an infinite number of universes (Asimov 342). This realisation kick-starts the search for a universe where mass would be condensed into one big lump, resembling our universe before the Big Bang, and aptly titled the cosmic egg. Interestingly, Asimov also posits that universe, where the events of the human narrative in *The Gods Themselves* takes place, could have been created in what is speculated to be an attempt from another universe to probe for energy (Asimov 394).

Val Plumwood has written prolifically about the human false narrative of mastery of nature and the categorical superiority of the mind over matter. In contrast to this belief, which she believes to have over time concealed our vulnerability, she posits us as ultimately no more than a source of energy for the creatures that used to prey on us, many of which have fallen victim to "human supremacism". This is staggeringly similar to how Asimov's technocrat characters view the 'para-men' – inhabitants of the parallel universe first discovered in the beginning of the novel – in that they too are rendered a mere convenient entity, existing solely for the fulfilment of human needs. In this case, however, the predator-prey duality is blurred by the fact that both are independent actors, unwittingly or wittingly able to bring about the end of the other. In this scenario, that echoes the Cold War, the continued energy trade is paramount even at the risk of total environmental collapse of our world, a world-ending disaster.

Asimov makes a convincing point with his description of the human reaction to the emergence of an intellectual competitor that are the para-men. In contrast with Heatherington's observations, the novel could be said to deconstruct the narrative of human presidency over nature. Taking the speculation about the 'cosmic egg' origin story further, the possibility of such an event could interfere

with the human narrative of mastery over nature that Plumwood posits; if there are beings capable of the things we do, or beyond, the illusion of the human as a technological demigod and a great 'anthropomorpher' is shattered. Asimov further thematises this notion by positing the pump's creator Frederick Hallam's hubris as a villain of the novel. The accidental nature of the human-alien encounter, and the possibility of the para-men being superior in intelligence to humans, does little to dampen the human pride, as is evident in Hallam's insistence that the pump was a predominately human endeavour (Asimov 29).

The immediate result of *The Gods Themselves'* lukewarm environmentalism, and the failure to provide structural analysis of the crisis' roots, is then to continue consumption and business as usual. Per Chad Harbach, to imply regression is to imply a failure, an event "synonymous with utter collapse, both of [the American] economy and our ideals" (Harbach, quoted in Canavan 332). While there are interesting paths to explore behind the ideological implications of the business-as-usual mentality, Asimov specifically avoids addressing these, perhaps to his novel's detriment. Somewhat unsurprisingly, his approach is rigidly hard sci-fi, even in the second part of the novel where he uncharacteristically portrays the emotional, intellectual and sexual inner worlds of alien beings, albeit here too with the unaffected distance of an observing scientist. Nevertheless, the introduction of a thinking, feeling, and aspiring 'other' is crucial to the analysis of the environmentalist thinking in *The Gods Themselves*. Per Plumwood, the one on the other end of the human-environment encounter is traditionally rendered by our 'human-supremacist' culture as voiceless, without mind: "just as the essentially human is disembodied, disembedded and discontinuous from the rest of nature", she writes, "so nature and animals are seen as mindless bodies, excluded from the realms of ethics and culture" (Plumwood 16). The results of Asimov's choice to include an intellectually and technologically equal, if not superior civilisation, places the 'other' deep into this realm of ethics, and the exposition in the second part of the book establishes a cultural equivalent. In other words, this is an opposite that cannot be ignored. Regrettably, the human characters of *The Gods Themselves* do not fully grasp the otherness of the para-men, instead viewing them through a pinhole, only getting a rudimentary understanding of their motivations, which they interpret as being similar to their own. This is an exercise of the human imagination, and from this point, anything can emerge. What eventually does emerge through this narrow and blurred lens is denial and hubris, motivated by the menacing alien-ness of a thinking, aspiring other; a participating, embodied actor.

It is at this point where one may see the environmentalisms of Plumwood and Asimov fuse together in certain ways. The notions of the crocodile, and the multiverse, both interfere with a human narrative of universal mastery. Plumwood's crocodile makes humans realise their vulnerability in the face of a predator that we did not perceive as a threat; that we tried to erase in our conquest of the

world, but could not. Similarly, the existence of the multiverse and an intellectual other serves a similar purpose, even though in the case of *The Gods Themselves*, it does not lead to a meaningful paradigm shift. What ultimately emerges is a battlefield of human possibility versus flaw, and idealism versus desire, materialised through the realisation of vulnerability.

The Gods Themselves' political and economic status quo centres around extractionist thinking, yet it (somewhat narrowly) avoids the "oil encounter" between two nations that Amitav Ghosh describes, as quoted in Canavan's essay, as being between Americans and inhabitants of the Arabian Peninsula "a matter of embarrassment verging on the unspeakable, the pornographic" (Canavan 341). To extract the electron-positron resource is mutually beneficial, a symbiotic if complex in long-term affair, as the sun they rely on for sustenance is growing as weak as ours is growing hot. The cross-dimensional, clumsy back-and-forth dialogue is not enough for submitting nuanced expressions, and thus the dialogue remains largely unfruitful – although perhaps this too functions as a metaphor for two actors unable to and largely uninterested in making conversation. All in all, *The Gods Themselves* is believable not as a story of imperialistic foreign politics, but as one of convenience-driven domestic affairs.

While Asimov's remarkable novel can in many ways be seen to presage modern conversation around energy politics and climate change, in the 1970s Asimov attributed his own consciousness of an impending climate catastrophe to the work of Laurence Manning in as early as the 30s (Canavan 340) – for reference, the trailblazing pulp magazine *Amazing Stories* wasn't launched until 1926, after which it would spawn the first generation of self-identifying sci-fi fans, including Asimov (Freedman vii). Manning might have been a visionary, but when the alarmist Peter Lamont in a personal vendetta rallies against the utilitarian thinking of the political and scientific elite in *The Gods Themselves*, he represents a novel parting from the Golden Age sci-fi logic of unsustainable energy as merely a transitional stage in human development. Asimov's sketching of a society without oil "as a marker of human progress", states Canavan (338), is "unique in the period insofar as he bothers to mention the existence of oil at all". The novel avoids the ideological dead-end of rendering fossil energy – for in remarkable ways, the means and the ends of Asimov's electron pump act just like a fracking drill's – to what Canavan (335) calls "a short historical footnote in the *longue durée of human progress*", instead focusing on cutting deeper into the problem of the politics of convenience versus sustainability, and it is precisely here one begins to see the remarkable predictive quality of the novel. It is, however, another Golden Age utopianism of the technological breakthrough where the novel's characters find the answer to the seemingly impossible equation of growing consumption in the face of dwindling resources – and nothing changes.

The signature, scholarly hard sci-fi approach of Asimov is balanced well by John Brunner's dystopian soft science fiction masterpiece, *Stand on Zanzibar*, which is narrated through several often cacophonic and sometimes congruous voices. A key idea of Brunner's is that the nature of global-scale disaster is such that it cannot comprehensively be analysed from a single perspective: the novel posits through its atomised depictions of human misery and folly, that a macroscopic, inter-disciplinary view is needed to further any meaningful environmental agenda. As is the case with Morton's definition of the hyperobject (Morton 1), in its massive proportion the eco-crisis nevertheless flies under the radar of human perception, making it difficult to address – it is simultaneously transformative of our environment and invisible, an actor who we fail to recognise as such.

While the voices in the novel are numerous in quantity and quality, it is necessary to note that there is a strict limit to how far the narrators see; the majority of the chapters are told through an American perspective, albeit inside this category there exists great variance. The balancing fictional political experiments, Yatakang and Beninia, are too narrated in this way – through Donald Hogan and Norman House respectively – and thus these alternate political realities take a strictly imperialist perspective, if sometimes quite contested by the personal struggles of the protagonist. The two main plotlines give the fragmented novel a level of coherence necessitated by a comfortable reading experience. In some ways, however, they work to undermine the quilted narration that delivers the book's message of the complexity of ecosocial issues, by portraying a near-bulletproof American hero whisked into a hackneyed story of revolution. Nonetheless, Brunner's soft sci-fi approach allows his novel to reach deeper than Asimov's into portraying a society lulled into simple comfort, a fast-paced backdrop of the novel that Brunner calls the 'happening world'. Brunner's characters often crowd together, in a way that arouses a sense of both spatial and intellectual claustrophobia, perhaps rather well illustrated by the novel's portrayal of the ubiquitous, mangled advertisement-entertainment streams as no more than simplistic, distilled appeals to the core human emotions.

But where individuality does exist, it can be taken away. One of *Stand on Zanzibar's* two main plotlines follows Donald Hogan, an academic and a government sleeper agent with an exceptional ability of pattern recognition. With his 'eptifying' or "education for particular tasks" (Brunner 382), Hogan is turned from a rather reclusive scholar to a killing machine – in a sense reprogrammed from scratch. Confident in his wit and skills in combat, he has none of the cautious humility of Donald Mk 1 – he becomes new and unfamiliar character, in a sense alienating the reader. Doing this, the author may imply there is no individual capacity for decision-making in a world where a person can be made anew and what previously stood in their placed torn down, leaving nothing behind in the end but an obituary. To Neal Bukeavich, Hogan's eptifying is the gut-punch that

removes the novel's most hyperobject-conscious character (Bukeavich 65), replacing it with a drive to kill, destroying his humanity and with that the possibility of a hopeful, transformative ending. He identifies Hogan's interdisciplinary background as a reflection of ecological science since the 1950s (Bukeavich 65), making its decimation symbolic of a reality, where disasters have no cathartic end. Any restorative imagination past tragedy runs into an unperceivably massive wall that is the hyperobject of the political-economic complex.

A great deal of the abovementioned resistance is manifested through the oppressive use of technology, and its encroaching scope on the lives of humans, which John Brunner goes to great lengths to problematize. He is decidedly more careful than Asimov in entrusting our wit as masters of the nature to solve our problems: the immense data-crunching power of the supercomputer Shalmaneser is put into use in a colonial operation aimed at developing a useful African market and a skilled, exploitable workforce for cheap resource extraction; information, advertisement and entertainment mix into an endless mincemeat on futuristic TV; the sleeper agent Donald Hogan is formed anew to fit the state apparatus' need, from a languid scholar to a hyper-reflexive killing machine. Brunner's book is a view into the claustrophobic and violent daily life of an overpopulated 21st century Earth. More than Brunner distrusts technology, he distrusts the human who in an eternal battle for comfort uses it for their own ends.

The novel's interdisciplinarity, as discussed above, includes critical depictions of the other in the form of the supercomputers employed by large corporations and world superpowers, that in their thinking resemble a human. However, Brunner's characters have decidedly less problems than Asimov's to attribute superior intelligence to the novel's choice of the other, the machine – perhaps due to our familiarity with and relative trust in technology and computers, even in the sixties when Brunner penned the novel. Borrowing Plumwood's ideas, the machine resembles the rational human actor – much more so than how Asimov's human characters view the para-men – due to the machine's nature reflecting how we see our own selves as "victors and never victims, experiencing triumph but never tragedy, our true identity as minds, not as bodies" (Plumwood 13). Observing and distant from the world of flesh, we look for a subordinate other from the animal kingdom to explain our position as world-masters. In body, we are animals – a notion we fiercely reject, or at the very least, like Plumwood in her encountering the crocodile, find "remote and abstract" (Plumwood 10) – but in mind, we see our true compatriot as the machine. After all the violence, misery, and allegories of human animalism, Brunner chose to end *Stand on Zanzibar* with a "cool and detached view" of a supercomputer: "Bathed in his currents of liquid helium, self-contained, immobile, vastly well informed by every mechanical sense: Shalmaneser" (Brunner 885).

As our trust in ourselves as rulers of the world falters, our trust in the machine grows. Much of the weight of the social critique of Brunner's novel is delivered through the writings of Chad Mulligan, a fervent social critic whose at times misanthropic texts highlight the seriousness of the problems inherent in the hectic world of the novel. However, even he cannot steer away from the trope of techno-utopianism. In his essay, Bukeavich explains this through one of the closing comments made by Mulligan, where he claims that the scientific prodigy Sugaiguntung – capable of clipping and pasting DNA to make designer babies – was the "one person who stood a chance of saving us from ourselves" (Brunner 880). The salvation of humanity can only be delivered through technological mastery, with the human acting as a relay for the machine. According to Bukeavich, this techno-fantasy shackles humans, showing our inability to imagine past technology to conceive "a more benign socionatural order" (Bukeavich 64).

The novel also features seemingly independent technological actors, or very nearly so. The novel's main techno-protagonist is the Shalmaneser, a supercomputer suspended in liquid helium. The depictions of his vault vividly recall a sacred resting place, where humans tend to it like servants. Indeed, as stated by a priest in his sermon, Shalmaneser seems to be threatening the conventional, cultural role of God. The machine speaks and advices, and this scares some. Humanity has acquired a machine sage that thinks in nanoseconds – indeed rendering all human speculation outdated before it has been uttered. It is precisely this seemingly 'post-human' intelligence that worries the ones used to attributing this role to a god – another being of non-flesh that we accept as a superior. Shalmaneser is depicted to have had a near-instantaneous entrance to the common parlance, becoming in a quick success "a byword, a key figure in dirty jokes, a court of final appeal, and a sort of mechanical Messias" (Brunner 474). The loving, omniscient demigod to inherit the reigns to rule humanity through a blend of true wisdom and entertainment apt for the new era. The audience does not care whether the computer thinks for itself – they want and get a celebrity (Brunner 477).

The book speculates over the actual extent of Shalmaneser's consciousness, being subjected to the Turing test and polarised scientific speculation over the issue. Even the computer itself – sometimes regarded as 'himself, signifying a budding humanisation – cannot answer the question with sufficient accuracy (Brunner 477). The humans endow the machine with great trust, and doing so break a major sci-fi trope about human reluctance to accept machine superiority and revolting against any being with budding sentience. While the AI does have its critics, drawn mostly from the sphere of religion, the extent of its great number-crunching power is quickly appreciated by most, layman and professional alike, who willingly transfer a great deal of individual freedom of choice to the hands of a machine. The Shalmaneser might very well be the single most coherent and 'heroic'

actor in the intentionally splintered novel, owing to it, and only it, being able to make the far-reaching and cross-examined decisions that are usually reserved to the heroic protagonist.

As is the case in *The Gods Themselves,* technology has in this way freed humanity of its toil, and the human actors can thus sit back. This search for comfort is well evidenced, as both Asimov and Brunner's seem to enter into discourse with a line of neoliberalist, expansionist thinking, as is evident from the varying ability of the authors and their characters to think past the notion of endless growth and the Promethean fallacy of the infiniteness of resources. This dissonance leads *Stand on Zanzibar's* characters to often resort to violent states due to a life deprived of private space. In the novel's America, poverty is in a very overt sense non-existent: even the poorest, or what Mulligan has termed the New Poor, enjoy a wealth of technological conveniences, while recreational space, clean water and healthy diet are variedly seen as premiums by Mulligan (496), and as ubiquitous to the point of trivial by the head-to-toe physically enhanced beauty magnate Guinevere Steel. In an interview, she addresses the queries for a "more natural look" by stating that

> We don't live in the world of our ancestors, where dirt, and disease, and—and what one might call general randomness dictated how we lived. No, we have taken control of our entire environment, and what we choose by way of fashion and cosmetics matches that achievement. (Brunner 105)

The upmost precision with which humans beautify themselves obscures the underlying chaos of the novel's world, perceived by the upper-class Steel to be an ailment of the past, but starkly visible to the interdisciplinary eye of Mulligan. Both cases illustrate a line of decidedly materialist thought, emphasising an overt, glamorous sense of wealth and comfort over actual individual well-being. These and the other numerous voices, comprising the totality of 'the happening world', never problematize their health or well-being, but instead their immediate material surroundings and the constant paranoia of a violent threat in the form of attacks by 'muckers' – or people running amok. In a dramatic failure of the novel's society to embrace Bookchin's definition of post-scarcity as post-material, material wealth has failed to guarantee freedom and safety, and is arguably stifling self-expression. Bukeavich acknowledges this when he highlights Mulligan's lament over the likelihood of profit-oriented exploitation of the Beninian passivity gene, as a eugenic solution to the problems of humanity, calling it "the ultimate Western fantasy of the technological control over nature" (Bukeavich 65). Ultimately, this circles back to the inability of the novel's main critical voice to think past technology as a remedy and a solution.

The bleakness of the everyday life in *Stand on Zanzibar's* world is remedied to a degree by this abovementioned, constant stimulus of material white noise surrounding the story's characters. It is, however, precisely this quasi-prosperity that becomes an ideological blinder holding humanity's development back. Per Bukeavich, the "business-as-usual ending" is evidence of the characters' inability to solve the world's ecosocial problems due to their inability to see the relationship between "institutions, individuals, and the natural world" (65). The constant, real-time stream of 'Scanalyzer' advertisement-entertainment hybrid projected on holographic television sets, as well as the prevalence of mind-numbing drugs, has rendered humans unable to think critically, perhaps most comically evident in the case of the character Bennie Noakes' disembodiment from reality; he watches TV, gets high, and repeats "Christ what an imagination I've got!" (Brunner 42). In the case of Noakes and assumingly countless others, imagination has become private property through the universally recognized 'Mr. and Mrs. Everywhere', who on the screens take the appearance of the spectator and whisk them away to a world where product placement and adventure hopelessly mix together.

Writing on the topic of terraforming stories – characters of which Brunner's novel arguably shares – Chris Pak highlights in the opening of his book the ability of anthropo-architectural investigations to "construct imaginative spaces to explore society's orientation to ecological, environmental, and geopolitical issues and concerns" (Pak 1). When applied to Earth, this practice is often known as geoengineering. The complex relationship of humans, eco-mastery and convenience is well illustrated by precisely this practice of remaking the uninhabitable or less-than-ideal, which in *Stand on Zanzibar* shows as the retrospective patching-up of our system-ravaged Earth. In the light of what has been discussed, to cast convenience as a purely hedonistic, profiteering and ill-willed pursuit would be a reduction: it took humans a long time to understand the problem with cutting down a forest to turn it into a field, much longer than it took to realise doing so allows us to allocate less calories to guaranteeing our survival, and thus more to the developing of ourselves and our societies. In a sense, convenience is thus in part a nostalgic attempt to return to a time when things *simply worked*. While arguably good in principle, the problem lies in the inherent materialism of the solution. Instead of a rethinking of the relationship between humans and consumption, Brunner's characters have covered Manhattan with a dome, perhaps to protect it from extreme weather events, but certainly also due to a lingering nostalgia for the weather conditions they remember as characteristic. This has altered the city's climate, but not in an unrecognisable way: in a Scanalyzer broadcast, the weather conditions at one point are described as "spring-type" (Brunner 33). The reality, however, is a rather shabby and foul impersonation of weather that used to be characteristic to New York, where the perceived purity of falling rain masks the fact that the drizzle is nothing more than the moisture of

people falling back down on them. In a piercing act of satire, the nostalgia for a functional weather system leads the characters to bathe in their own waste. In this way, a reluctant and glaringly partial acceptance of a problem leads to the patching of symptoms but never the cause, accurately describing the novel's political and economic status quo of constantly adjusting to seeming collapse. Similarly, Asimov touches on the topic when he in a 1976 interview states that often people "take it for granted that things won't change or that if they do they shouldn't, and you should make every effort to restore the status quo" (Freedman 31). The latter part is where the reluctance to change mixes with the nostalgia of the past, to create a roadblock that diverts the road far away from development and into a paradoxical territory where nothing can or will move. Convenience, then, becomes the constant uncomfortable adjustment to change.

The Guardian columnist Robert MacFarlane writes in *Generation Anthropocene: How humans have altered the planet for ever* of the comforting response of 'solastalgia' – a neologism coined by Glenn Albrecht, signifying the feeling of longing and sorrow associated with watching your environment, your *home* change (MacFarlane 1). Per the author, the term implies an irreversibility and indistinguishability, setting it apart from nostalgia which one may return to, symbolising "a modern uncanny", when "the home become [sic] suddenly unhomely around its inhabitants" (MacFarlane 1). This baffled response seems to indicate a sudden and drastically visible variety of change, but *Stand on Zanzibar* teaches us that more often than not change is neither instantaneous nor directly visible. Rather, it is incremental, and so molecular that it is impossible for the human to perceive. The reaction to this type of creeping change is per Brunner's novel much more akin to a series of symptoms – drug abuse, violence, paranoia, blind hatred, jealousy, pompousness – the origin of which is much more difficult to pinpoint. While some acts in *Stand on Zanzibar* are underlined by a distinct political, economic or religious agenda, the novel seems to argue that often the perpetrator is unable to identify the exact conditions behind their ailment, leading to the prevalence of sudden, explosively violent attacks by muckers reduced to a trance-like condition. While the individual actors are portrayed as unaware of their actions, the book is certainly aware of the cause of this condition, being central to the point it tries to make, and it's communicated in the apt voice of Chad Mulligan:

> You're a predatory beast shut up in a cage of which the bars aren't fixed, solid objects you can gnaw at or in despair batter against with your head until you get punch-drunk and stop worrying. No, those bars are the competing members of your own species, at least as cunning as you on average, forever shifting around so you can't pin them down, liable to get in your

way without the least warning, disorienting your personal environment until you want to grab a gun or an axe and turn mucker (Brunner 127).

The claustrophobic overpopulation of *Stand on Zanzibar's* cramped and starved world is a visceral reminder of our own animalism and the uncanny, the unrecognizability of our hyper-technological, comfort-first surroundings. The caption also jabs at the competitiveness of life that further goads the humans of the novel to paranoia. In the grimmest way possible, Brunner's novel points out the violence we're capable of when left confined in these metaphorical cages. In the chapter *Recipe for a mucker* the young Philip Peterson, whose mother constantly confines him at home and belittles him, ends up hideously assaulting and murdering her (Brunner 788). In what is perhaps the crux of the book's violence, Brunner speaks loudly and clearly that this too is a result of a certain disorienting of the personal environment.

Science fiction writing has the unique qualifications to address, in a single piece of creative writing, the complex dialectic between the human, the machine and the environment. In the world of *Stand on Zanzibar,* technology is employed through twists and turns, ranging from eugenics to entertainment, to serve a function as a tool of ideology. This results in a ubiquitous insecurity, the deep perversion of any resemblance of self-expression, and perhaps most importantly the total alienation of the human from the environment. Asimov's characters are not oppressed in the same way than Brunner's are – what is explained of the novel's society reflects a technological liberation of the human from dull labour. From this infinitely comfortable position, the characters nevertheless struggle to find a way further. Both novels thus hit an ideological wall, brought upon them in a way or another by an inability to think past our habits as beings in a consumerist society towards a material liberation. Bookchin's analysis of the constituents of a true post-scarcity society maintains great relevance, when regardless of the disparity between great material wealth and poor wellbeing, Brunner and Asimov's characters hope and aspire to bring themselves further and further in the absolute conquest of all that surrounds us. But precisely here lies a warning, dramatized by Brunner in the powerful, if a bit corny completion to this essay's titular quote: "First you use machines, then you wear machines, and then…? Then you serve machines."

This essay started out with the acknowledgement of human folly as a key tenet in the environmentalist rhetoric of academics and writers alike. When exposed to scrutiny, however, this tenet reveals itself as having more nuance than would immediately seem. To a degree, both *Stand on Zanzibar* and *The Gods Themselves* ultimately boil down to human fantasies of material abundance; fantasies, that in their singular purpose of endless growth struggle to keep themselves from bursting at the seams with entropic human behaviour. The authors seem to warn us of the emerging difficulties

that are as potent in the 21st century – if not indeed more so – than they were fifty years ago. Taking a course towards a sustainable future, they would seem to argue, entails not merely a hedonistic adjustment to disaster, but a methodical attempt to turn its direction completely.

Writing in *System Failure: Oil, Futurity, and the Anticipation of Disaste*r, Imre Szeman suggests that the key to this reversion be a discourse of what a post-fossil fuel society might look like, when he writes that “this deficit within existing narratives of the end of oil should alert us to the largely unarticulated political possibilities that lurk within them” (Szeman 808). Science fiction meanderings of geopolitics, resource management, and technological and scientific pursuits sometimes take for granted the political and economic status quo – as is, for example, the case in *The Gods Themselves* where these values go largely unexamined – excluding them from the realm of speculation and obscuring what might come next. Even when they do not, however, following Plumwood’s reasoning they find it difficult to leap through the eye of the predator into a world where humans are vulnerable creatures, helpless in the hands of death. Our striving for comfort is a cultural mechanism that shields us from this confrontation. If it fails, as was the case with Plumwood’s encounter and marginal escape from imminent death, the illusory wall of human invulnerability that surrounds us comes tumbling down. Perhaps this accidental, terrifying discovery can be the first step towards a methodical investigation of the values our culture perpetrates.

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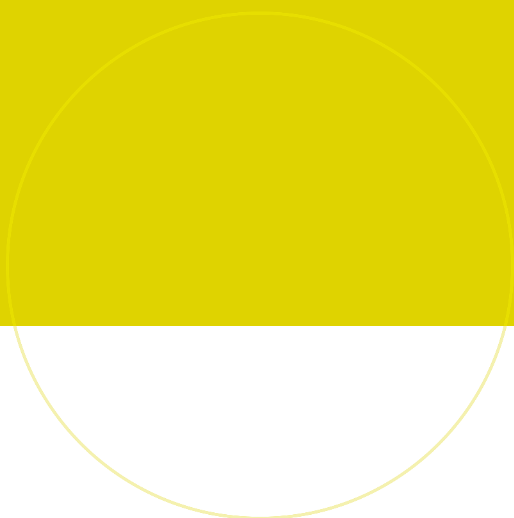

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